Presidential Address

ON THE

PRESENT POSITION OF TREATMENT OF FRACTURES.

DELIVERED AT THE LIVERPOOL MEDICAL INSTITUTION.

(With Special Plates.)

BY

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IN the days of our forefathers fractures, amputations, herniotomy, and lithotomy formed the most important sections of surgical procedure.

With the discovery of the bacterial origin of inflammations and the advent of aseptic methods a new era in surgery began. Amputations were deposed from their former position as the great operations in surgery. New domains were conquered in the regions of the abdomen, the pelvis, the thorax, and the brain.

The rapid advances made during the last thirty years have cast a glamour over the eyes of the younger generation of surgeons. There has been so much to discover that was new, both to teacher and to student, that the treatment of fractures was for a generation allowed to fall into the background as a subject on which our grandfathers had said the last word.

In most of our medical schools the treatment of fractures has been definitely assigned to junior officers. Nor is this all. The demand for beds is so pressing that a house-surgeon will gain no favour if fractures are admitted in numbers or retained for long. Hence the immediate application of plaster and its attendant evils—stiff limbs, wasted muscles, non-union, and pressure sores. In each school routine methods have during the years become stereotyped, until at the present time it is possible to name, almost with precision, the school in which a man has been trained by the splints and methods he employs for the treatment of any particular type of fracture.

In very recent years it has become evident that the end of this régime is rapidly arriving. The advent of *x* rays has led men to think more of the results obtained by the routine methods of treating fractures. In this country this has culminated in the appointment by the British Medical Association of a Special Committee of Inquiry, whose report has now been published.

I desire to make a few remarks upon the report. It has been compiled with so much care, accuracy, and impartiality that it must always remain a document of the first importance. The committee deserves our sincere congratulations and thanks. It had a difficult task, and has performed it well.

With the general advance of surgery, and the immunity from disaster afforded by aseptic methods, there has been a great advance in the operative surgery on bones. At home and on the Continent a school has arisen which advocates almost as a routine the operative treatment of fractures. In England this school has a most inspiring leader in my friend, Mr. Arbuthnot Lane.

On reading the committee's report, it would seem at first sight that we have come to the dividing of the ways, and must prepare ourselves to face the question whether in future we are to treat most, if not all, fractures by immediate operation. For the last of the conclusions come to by the committee reads as follows:

> For surgeons and practitioners *who are unable* to avail themselves of the operative method, the non-operative procedures are likely to remain *for some time yet* the more safe and serviceable.

I am, however, very confident that the question is not "Must we prepare ourselves to admit that primary operation is to become the recognized routine?" There are two very real questions—first, "Can we improve our non-operative technique so as to remove the discrepancies which are in some instances glaringly apparent?" and, secondly, "Can we lay down any laws to guide us when we ought to operate at once?"

I can justly claim to have had a long and large experience of the treatment of fractures. As an orthopaedic surgeon I have necessarily been led to regard fractures as potential deformities, and in many instances the treatment I adopt is modified from the traditional method in order to anticipate and prevent subsequent impairment of function. In other cases I lay special stress on certain measures of after-treatment. And, again, I recognize that in a small minority of fractures I obtain a better result by immediate operation.

House-surgeons and others who come to me from different schools, or who, after working with me, have gone out into the world and pursued their studies elsewhere, often say that certain details to which I attach special importance are not accorded elsewhere the same amount of attention.

On careful perusal of the details of the report, I am inclined to think that perhaps these house-surgeons and others may be correct in what they say, for the results reported are not so good as they should be.

The fracture cases are classified by the committee into those treated by non-operative and those treated by operative measures.

The cases operated on are classified as:

(*a*) Cases in which primary operation was decided upon.
(*b*) Cases in which in the course of treatment good position was not maintained, and operation was resorted to as a secondary measure.
(*c*) Cases in which operation was performed on account of non-union or mal-union.

The last two classes should be counted among the failures after non-operative treatment, but controversy on this point has been avoided by their separate publication.

We are therefore left with clearly stated statistics of 2,596 cases in which no operation was performed, and of 147 in which primary operation was performed, and also two subsidiary lists of 78 and 83 cases in which secondary operation was performed on account of failure of non-operative treatment.

Now of the 78 cases in Class (*b*) in which it was recognized during treatment that good position was not being maintained, and operation was decided upon as a secondary measure, only 60 per cent. produced good functional results; while in Class (*c*), in which operation was performed for mal-union or non-union, only 38 per cent. of good functional results was obtained.

The lesson is therefore clear that whatever methods be adopted they must be efficient from the first. If a surgeon is doubtful whether he can treat a fracture efficiently by non-operative means, he ought to consider whether he cannot do better by operating at once. He ought not to say, "Well, we can see what becomes of it, and if it is not satisfactory we can operate later," for by so doing the opportunity of getting a good functional result may be irretrievably lost.

MAL-UNION AND NON-UNION.

Both mal-union and non-union are common occurrences, and are very often correlated. I see such cases every week, and I would offer a few suggestions which might prove useful in rendering such results less common. The angular deformities so common in the out-patient department (Fig. 1), and which are a reproach to surgery, can always be avoided. If we cannot always secure an end-to-end apposition, there can be no difficulty, with even the most primitive means, in securing a correct alignment (Fig. 2). This is of extreme importance in dealing with the lower extremity.

Deviation from correct alignment means alteration in structure in accordance with Wolff's law—that is, an effort made by Nature to adapt the parts to the deviated lines of muscular stress or to the deviated lines of the force of gravity. We know that such deviations produce buttressing changes identical with those of the hypertrophic type of osteo-arthritis. There may be mal-union in a case which has been wired with end-to-end apposition, the "mal-union" being due to a lateral or antero-posterior deviation causing erroneous deflection of body weight. This produces straining of the fracture and a stretching of structures in the joint both above and below the seat of fracture. It is within the power of every surgeon, if he be allowed a free hand, to secure a straight setting. I think the fault made by most practitioners is to be too

sparing with traction. In a femur with much displacement, especially in a strong, muscular subject, it is well to employ a pulley and not to be satisfied until the affected bone is of equal length with its fellow. If the bones are of equal length, there is usually hardly any overlapping and no lateral deviation. It is true that if the fracture is in the upper third the fragment may be influenced by muscular action, but the spasm abates and disappears very soon in the presence of unyielding and not intermittent traction. Mr. Dobie, of Chester, and I straightened by pulleys a femur which had been fractured four months with 3 in. of overlapping. This patient was over 30 years of age, and the break was in the middle third of the femur (Plate II). In another case—which I saw with Dr. Caine, of Rock Ferry—we were able to correct a lateral deviation by manipulation after several weeks. In another case, a few weeks ago, the pulleys were applied to the femur of an adult with 4 in. of overlapping four months after his accident; 2½ in. were gained, and I have confidence that I shall be able considerably to reduce or to obliterate altogether the remaining shortening after another application of the pulley. I merely mention this to show how much can be done in old and obstinate cases by means of properly applied force, and to suggest how much simpler all this would be in the case of a recent fracture. While exercising traction the anaesthesia should be deep.

Another cause of mal-union is inefficient splinting. The splint applied should be so constructed as to allow the continuance of extension and prevent any deviation from the normal line. Take, for instance, a fracture through the centre of both bones of the leg. Both bones are, of course, normally slightly bowed, and in reducing the fracture it is essential to remember this. If the leg be set absolutely straight body weight will be deflected to the inner side of knee and tarsus. This will mean a strained internal lateral ligament at the knee and a weak, painful, everted ankle.

Another cause of mal-union is the effect of body weight carried too early by recovering bone. How often have we noticed the bending of an apparently sound bone when the patient begins to walk. Why should this be so? There are two reasons. First, the surgeon has not anticipated the deformity and taken measures to prevent the erroneous deflection of body weight; and, secondly, we are all misled by our textbooks as to the period of complete consolidation of bone. Some years ago I recalled a number of cases of fracture of the femur which had left the hospital with very slight degrees of shortening. They left between the second and third month. Consolidation in every case seemed complete. When re-examined some months later further appreciable shortening had occurred. If other proof were desired, one need only refer to a fact which I have scores of times demonstrated—the refracture by manipulation of mal-united femora from two to four months old, proving that the new bone is by no means consolidated. In operating upon such mal-union, especially in the thigh, I have found the greatest advantage in a subcutaneous or open osteotomy directed obliquely and the immediate application of powerful pulleys.

The ununited fracture is often the result of surgical impatience. At the end of the fifth week the surgeon tests the fracture and finds it ununited. If he left it alone for another fortnight or more, consolidation would probably be secured. Instead of this, an examination is made twice or three times a week, a consultant complicates the issue by a thorough manipulation, and what chance the dilatory bone had is soon gone. Non-union would rarely occur if delayed union obtained proper attention. We must remember that a small percentage of fractures require twice as long to consolidate as do the rest. I know of no better method of stimulating an effort to unite in early non-union than that introduced to the profession by my predecessor, H. O. Thomas (Figs. 3 and 4). It was known as the process of damming and percussion. With a heavy well-covered mallet the fractured ends were beaten, and an indiarubber tube tied 2 in. or 3 in. above and also below the fracture. I have seen scores of ununited fractures unite after this simple procedure.

One case made a deep impression upon me when a boy. A patient fractured his arm in America. The fracture was a compound one and did not unite. It was then wired at one of the New York charities, but still it remained ununited. Some months afterwards he came over to Mr. Thomas, who for several weeks percussed the fracture and tied a thin rubber tube above and below. At last it united, and Mr. Thomas said to me, "Shall we take the splints off?" "No," I suggested, "leave them on for another week." It was fatal advice, because next day the patient met a friend who said to him, "Come to the meeting of the faith healers." He went, and in full meeting they asked him to remove his sling and splint and hold up his arms in thankfulness for his recovery. He became their doorkeeper and leading light.

Perhaps the most obstinate of all ununited fractures is that which occurs in the tibiae of small children. I can record three such cases in my own practice, and I have seen several others (Figs. 5 and 6). They seem to resist any kind of wiring or plating and prove a veritable nightmare to the surgeon. I have secured firm union in two cases by transplanting a portion of the other tibia between and over the fractured ends. The autogenous transplantation of bone is a most valuable procedure in the treatment of ununited fractures.

Another practical point should be referred to when discussing delayed and unsound union. If a patient comes to me with pain over the site of an old fracture, especially when pressed upon, I suspect unsound union. If this be accompanied by marked callus exudation I feel quite sure (Figs. 7 and 8). In such cases, if there be faulty alignment, I definitely tell the patient that I shall be able to fracture the bone by simple manipulation regardless of duration.

[Mr. Jones showed a case in which the fracture was reset manually ten months after the accident.]

If we have to operate upon an ununited and mal-united limb, I would press upon surgeons the value of preliminary traction. An old overlapping fracture of tibia and fibula after traction by a pulley, and followed by extension for a week, may be fixed by plate and screws in much better position with less loss of bone than if operated upon at once. Powerful traction is not applied to the best advantage in the presence of a large wound (Figs. 9, 10).

Primary Operation.

The cases in the report in which primary operation was performed were only 147 in number, but in these good functional results were obtained in 79.5 per cent. of cases. These figures are not good, but it is only fair to suppose that many cases in which inefficient methods of fixation were adopted have necessarily been included.

We may, I think, safely conclude that if an operation is to be performed the fragments should be securely fixed with plates and screws. If the ends be merely wired together in the old method, skill has to be exercised to maintain a good alignment (Figs. 11, 12). The rigid plates will at least secure good alignment. A wired bone, in the absence of competent supervision, may be easily deflected. If the surgeon has mechanical skill, whatever operative method of fixation be adopted, he will probably obtain a good result.

If a comminuted fracture be operated upon, I would strongly advise placing all splintered pieces of bone in position rather than removing them. I frequently meet with non-union due to neglect of this precaution.

Cases not Operated on.

The number of non-operative cases is 2,596; in all full notes had been kept, and all were personally reported on by members of the committee. It is sufficiently large to give us some reliable statistics. Of these, good anatomical results with good functional results were obtained in 1,422, or 53.3 per cent., while good functional results were obtained in spite of moderate or bad anatomical appearances in another 16.1 per cent. Putting these together, we find that good functional results were obtained in 70.4 per cent. of cases, as against 79 per cent. of cases operated upon.

Taking all the statistics together, they prove that if the anatomical result is good the functional result is good in 90.7 per cent. of cases; while, if the anatomical result is bad or moderate, a good functional result is obtained in only 29.7 per cent. of cases.

These are very important figures and very disturbing, for there has been a tendency to take refuge in the fact that many cases in which the anatomical reposition of fragments is not good end in a good functional result.

Two years ago, in opening a discussion on fractures in the neighbourhood of joints, at the Royal Society of Medicine, I was responsible for the statement that I paid more attention to a correct alignment than to anatomical accuracy of reposition, and, in the case of fractures about joints, to function rather than to appearance.

At first I wondered if my former statement and the statistics now before me were in conflict. On consideration I think they are not, for, in dealing, as the report does, with fractures of long bones, correct alignment in fractures of the shaft can only be obtained by obtaining at the same time fairly good anatomical reposition. End-to-end apposition with an angle of deflection is less satisfactory than slight overlapping in the presence of correct alignment.

Fractures near joints present peculiar difficulties, and it is interesting to note that in the statistics of these fractures the percentage of good functional results, in spite of imperfect anatomical reposition, is exceptionally high.

Children.

Another important fact brought out by the inquiry is that the results of fractures in children up to the age of 15 are remarkably good—90.5 per cent. in non-operative cases, 93.6 per cent. operative cases; but in adolescents and adult life the results of treatment by non-operative methods show a steady deterioration as age advances.

It follows, therefore, that so far the results show absolutely no indication for routine operative methods in children. This is a momentous fact in justification of the harassed practitioner who desires to treat such cases without recourse to operation.

Fracture of the Neck of the Femur.

The failures shown in the results of treatment of fracture of the neck of the femur are startling. Of 20 cases occurring between the ages of 26 and 45 only 6 good functional results are reported; of 30 between 45 and 60 only 8 good results; and of 36 over 60 only 5. Of the cases at all ages only 16.4 per cent. show both good anatomical and functional result, and to these can be added 9.8 per cent. with good functional but not good anatomical results, making altogether 26 per cent. of good functional result. If we exclude the cases under 26 years of age, all of which ended in a good functional result, we arrive at only 21 per cent. of good functional results. This is a pathetic revelation, and surely more unsatisfactory than is warranted. It is not a question of old age and debility, where the fear of hypostatic pneumonia has been an excuse for abandoning rigorous methods of fixation. I know that the old method of treatment with the long Liston splint, weight, and pulley extension, is still often used. In a country village, where many factors may hamper a practitioner, it might not be easy to better this, but these are hospital statistics. The Liston splint and the weight and pulley should be discarded as wholly inefficient in all but very exceptional instances. To avoid or minimize deformity and obtain a useful limb it is essential to treat the femur in the abducted position.

The report does not refer to traumatic coxa vara—not at all an uncommon injury in childhood—but fractures of the neck of the femur occurring both in the young adult and old are grouped together. In the young and middle-aged there should be no difficulty in maintaining the limb in abduction, and whenever it is safe and practicable in the old an effort should be made at bringing the bones in apposition.

The mode of reduction is simple. A roller towel is placed around the patient's perineum to counter-extend while manual traction is applied to the limb. The traction should be continued until the correct length of limb is obtained. The limb should then be rotated inwards until the foot is at right angles to the table, and slowly abducted under tension. The abduction relieves the muscles which obstruct reduction, and it brings the outer fragment on to the inner. This position can be maintained by plaster-of-Paris bandage, but better still by the abduction frame illustrated in Fig. 13.

A question constantly asked refers to the disimpaction of fragments. If there be hardly any shortening and no rotation, leave it alone. If there be eversion and shortening, reduce it at once. It must be remembered that sometimes the only sign of a fracture of the femoral neck is eversion and pain, and the patient may even be able to lift the limb off the bed. The abduction frame secures stability for the pelvis and lower extremity, and the movements of the patient do not alter the tension in relation to the fracture. This rigidity at the seat of fracture favours repair with a minimum of friction, and thus frees the joint from embarrassing obstacles produced by excessive callus. In six weeks a Thomas's knee splint is applied with extensions, which safeguards the femur against upward displacement and allows of movement in different directions (Fig. 16). In older and more fragile patients where a question of hypostatic pneumonia arises, this Thomas's bed knee splint can be applied from the first, and the patient may be allowed to be well propped up. The report does not deal with the operative treatment of this condition; it has been extensively tried in America, and is now, I believe, pretty generally discarded.

Old cases frequently come to us where stiffness and great disability result. In quite a large proportion of such cases careful breaking down of adhesions with a course of massage effects a marked functional improvement. I am quite sure that the poor results chronicled in the report will be found to be due to two causes. First, inefficient reduction of deformity or no attempt at fixation; and secondly, too early attempts at walking. We should never forget that in such fractures the joint is often affected by traumatic arthritis, and that there is an unusually great strain upon the slender femoral neck. When the patient begins to walk I prefer him to wear a walking caliper to relieve the neck of the femur from the strain of carrying the whole of the body weight (Fig. 17).

Fractures of the Shaft of the Femur.

When we pass to fractures of the shaft of the femur in its upper, middle, and lower thirds respectively, the general proportion of good results is 58 per cent., 82 per cent., and 73 per cent. When, however, we take account of the ages a different story appears.

In the upper third the proportion of good results under 15 years of age is 95 per cent.; between 16 and 45, 70 per cent.; and over 45, 31 per cent.

For the middle of the shaft the figures are 97 per cent., 58 per cent., and 32 per cent.

In the lower third—94 per cent., 68 per cent., and 40 per cent.

The cases subjected to primary operative treatment reported in these three classes are 32 in number, with 29 good results—that is, 90.6 per cent. They were all cases under 20 years of age, so they are of no value for comparing operative with non-operative cases.

We should find out why the treatment of an adult is so much less satisfactory than that of a child. Let us exclude the cases over 45 years of age, for some of them must have been bad subjects, though even among these the results should be better.

Reverting to my personal practice and experience, I treat most fractures of the shaft of the femur in a Thomas's knee splint. This splint has only to be used for such fractures to be appreciated, and the merest tyro becomes an expert. In Liverpool there is no occasion to describe it, but its great advantages are quite overlooked by prominent surgeons in this country. I confess that when I have seen pictures of screws applied in a small infant's thigh I have experienced very mixed emotions, and when we read in the committee's report of an obstetrical fracture of the femur being wired in a child of six days, we are not surprised at the death which resulted, but we are surprised at the advocacy of such extreme methods of treatment.

Obstetric fracture in the newborn is best treated by a small Thomas's bed splint. The child can be carried about, nursed as usual, and the alignment is sure to be correct.

The splint is applied in the same way to older folk. The patient can be moved, lifted, and nursed without the slightest fear of muscular action telescoping the fragments, starting pains are unknown, and the alignment of the thigh is as nearly perfect as possible.

In certain fractures of the upper third of the femur when a marked deflection of the upper fragment occurs the abduction frame may be advantageously employed. At the end of six weeks the patient gets up and walks about in a walking caliper, and I am sure this physiological

exercise of the limb promotes good union better than any massage can.

Speaking as I do without any knowledge of the details of treatment adopted in the cases recorded in the report, I am persuaded the fault lies not in the way the fracture was set in the first instance, but in the fact that the thigh muscles subsequently contracted and produced too much movement of the fragments with overriding and shortening. If weight and pulley extension be used, every time the patient moves his body the muscles of the thigh are suddenly relieved of tension and then contract. If, however, a rigid system of extension is adopted, muscles cease to resist in from twenty-four to forty-eight hours. Of this I can give an interesting illustration. In 1902 I had a house-surgeon known to many of you who maintained an attitude of almost hostile criticism. He treated two cases of fracture of the femur just above the condyles on a Thomas's knee splint under my supervision, though his own inclination was to be orthodox and use a double inclined plane or a McIntyre's splint. Although both results were good he did not behave as one convinced. Some time later fate sent him a newsboy, aged 14, who had been run over just above the knee by a cab wheel, the tyre of which had stripped off the soft parts on the outer side, so that the fracture was plainly visible, with the lower fragment pointing straight back at the femoral artery. He cleaned up the wound, put up the limb in extension in a Thomas's knee splint. After fixation the femur was pointing uncompromisingly backwards, so he got ready a double inclined plane for use as soon as compression of the artery should appear. That night, when he dressed the wound there was no change. Next morning he was surprised to find the lower fragment tilted to an angle of 45 degrees. He tightened the extensions according to rule. Next morning the lower fragment was fully extended, and in line with the upper. The wound granulated and the bone disappeared. The last he saw of the patient was when the boy ran across Lord Street without a limp to sell him a paper. He has since told me that it was that case which finally convinced him of the truth of the teaching of the relaxation of muscles when a limb is fixed by an unyielding extension. The case is all the more interesting because the extension does not act directly on the gastrocnemius muscle so as to fatigue it. It is quite true that certain cases show some backward displacement of the lower fragment, and to obviate this division of the Achilles tendon is indicated.

Fractures of the Leg Bones.

Continuing an examination of the statistics before us, it is interesting to note that in fractures of the tibia alone anatomical results with good function were obtained in 74.4 per cent. of cases treated without operation, while the corresponding figure for cases treated by operation was 76.4. This clearly demonstrates how useful an intact fibula is as a splint for the tibia. When both bones are broken, the figures for good anatomical and functional results are 44.4 per cent. and 63.6 per cent. respectively. When, however, we include the cases in which the anatomical result was not good but the functional result was good, the figures are 70 per cent. and 68.1 per cent., the advantage being slightly in favour of the non-operative. This is a very interesting fact, for every surgeon aims at good alignment, and, when dealing with the leg, it is not so very difficult to get it, and it is interesting to find the report confirms our contention that Nature so admirably brings about a good functional result when alignment is satisfactory. The operative cases numbered only 22, and no doubt some of them were treated by wiring, and, doubtless, if plates and screws had been used by experts, the results might have been better.

If I were asked which fracture was the most difficult to reduce in the lower limb, I should say fracture of tibia and fibula in the lower third. Much can be done by powerful extension with the aid of a pulley, by division of the Achilles tendon, or by the introduction of a lever through a small opening opposite the site of fracture; but frequently we have to be content with a good alignment and a moderate anatomical restoration. In many such cases I am brought to agree with Mr. Lane that an operation is best performed. I have always operated upon such fractures while the pulley is at work, being scrupulously observant of the sterility of my extension ropes (Fig. 18). For the successful application of extension in fractures of the tibia and fibula I would commend a Thomas's bed splint used as indicated on the screen (Fig. 19). I show the extension without the additional metal splints.

When we come to Pott's fracture an illuminating fact becomes apparent, for out of 246 cases, 124 gave a good anatomical result, while only 119 gave a good functional result. That is to say, only 48 per cent. of good functional results, the good anatomical being in excess of the good functional results. The operative cases are only 4 in number, but of these only 2 were good functional results —50 per cent.

These figures are interesting and instructive, for in Pott's fracture, as I have constantly stated, the crux of the matter lies not in fracture of the fibula, but in the outward and backward dislocation of the foot. This is well known, and every surgeon in reducing such a fracture endeavours to invert the ankle; but comparatively few take any measures to maintain inversion of the foot after the patient begins to walk. I see a large number of cases every year of traumatic eversion due to a Pott's fracture (Fig. 20). They are surely not due to so-called bad setting. Some cases do well for a month, and when the patient returns to work the callus begins to yield, and the valgus deformity reappears.

It should be part of the routine treatment to raise the inside of the heel of the boot when the patient is allowed up, so as to compel him to walk in a slight varus position (Figs. 21 and 22). If the patient is a heavy subject an outside brace should be added.

One cannot help feeling that the profession in this country has much to learn in the treatment of Pott's fracture and in its satisfactory early reduction. The statistics in the report of the committee compare most unfavourably with the results obtained in the Bardenheuer investigations printed in the appendix to the report. Of 285 fractures at the ankle 77.2 per cent. recovered before the end of three months; after three months, 19.6 per cent.; those in receipt of sick pay later were only 3 per cent. These results are confirmed by three other independent investigators, Jott Kowitz, Loew, and Bleisener. A most admirable investigation reported by Hitzrot, bearing the impress of thoroughness, appeared in the *Annals of Surgery* this year. The cases were collected from the records of the Bellevue and New York hospitals. Of the 64 cases of Pott's fracture reported upon, 38 cases were in individuals under 35 years, all had perfect function, and flexion and extension at the ankle-joint was practically the same in both legs, and there was no pain. Twelve cases were in patients between 35 and 50; function was perfect in all the cases, extension was normal but there was distinct limitation of flexion in all. Two cases had pain, aching in character, after prolonged use. Of 14 cases, in patients between 55 and 64, function was perfect in 4 only, 5 had practically a stiff joint, and the remainder had motion enough to walk satisfactorily on the level but had difficulty on any incline and on steps. Flexion and extension were limited in all.

A Pott's fracture should be reduced at the very earliest opportunity in spite of swelling or effusion. The consequences of delay are serious. To reduce the fracture the knee should be well bent, and it may be helpful at first to increase the deformity in order to disentangle the ends (Figs. 23 and 24). With the foot somewhat flexed, the surgeon should pull the heel well forwards, and push the tibia backward until he feels the dislocation of the ankle is amended. He should then direct all the force that is needed to slightly over-correct the valgus. Unless there is a split fracture of the posterior portion of the tibia, there is but little tendency to subsequent displacement. The usual half-hearted attempts made to reduce this fracture will fully explain the disastrous final results.

The presence of deformity in an ultimate result may be due to insufficient reduction or to incorrect deflection of body weight upon yielding bone. It is very common to see such cases many weeks or months later with feet everted, complaining of pain over the internal malleolus, the site of fracture, and in front of the ankle-joint. If the fracture be but a few weeks old, by the aid of a wrench the lateral deviation may be corrected; and if the tendo

Fig. 1.—Overlapping and angular union of lower third of femur.

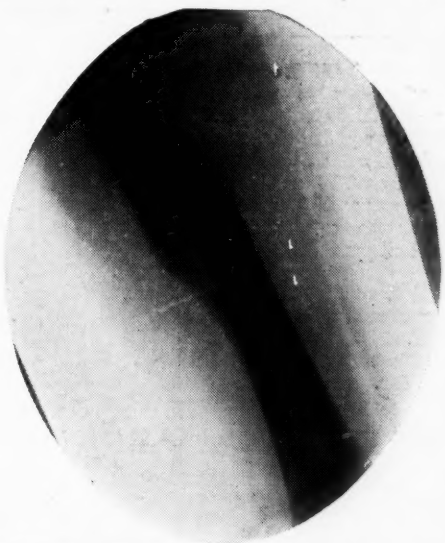


Fig. 2.—Overlapping—correct alignment—fractured femur.

Fig. 3.—H. O. Thomas's method of applying rubber tubing for non-union of fractured femur.

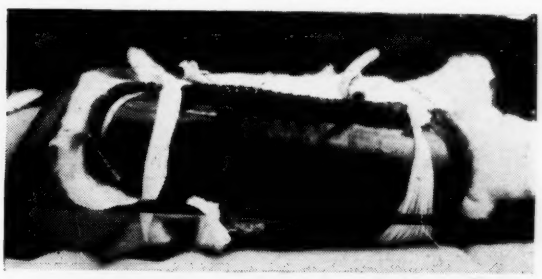


Fig. 4.—Same tied with side splints applied.

Fig. 5.—Ununited fracture of lower third of tibia—five years' duration.

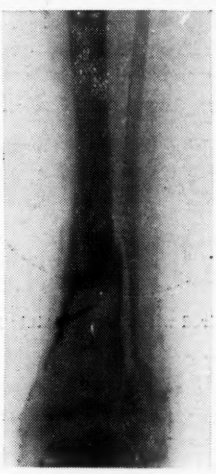


Fig. 6.—Same united after transplantation of tibia.

Fig. 7.—Case of malunited tibia and fibula.

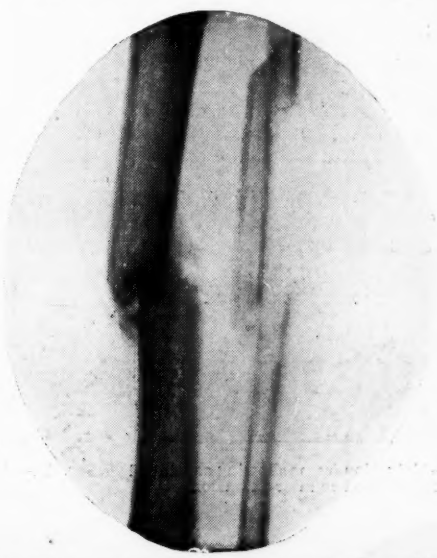
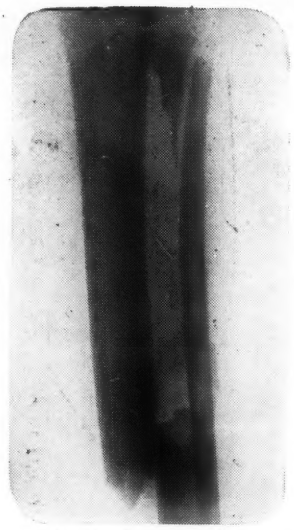
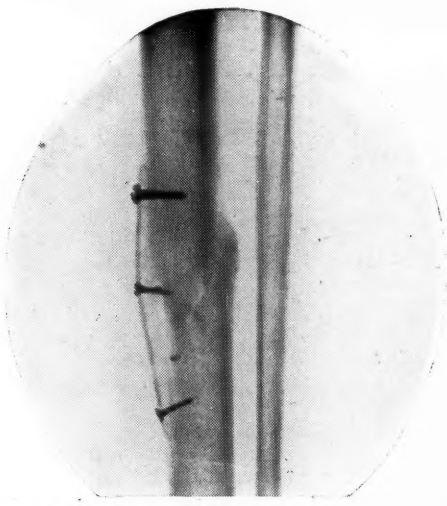


Fig. 8.—Same reset manually ten months after the accident.





Figs. 9 and 10.—Showing effect of extension by pulley in reducing deformity before operation.

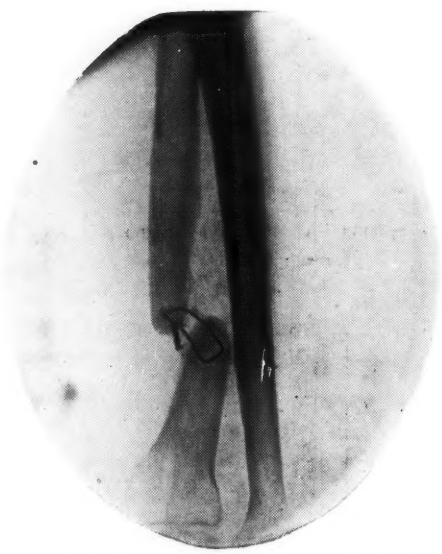


Fig. 11.—Radius wired without maintaining apposition.

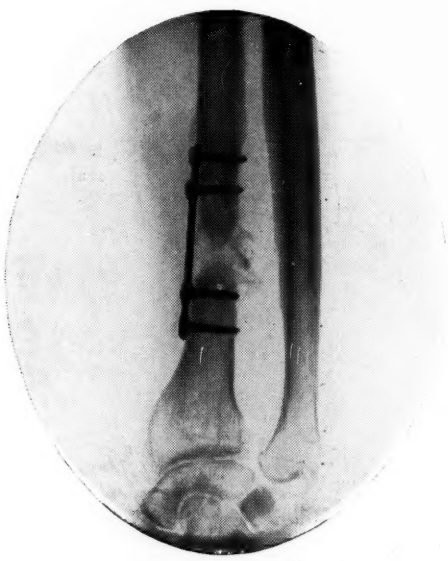


Fig. 12.—Same after plating.

Fig. 13.—Abduction frame showing continued traction and counter-extension.

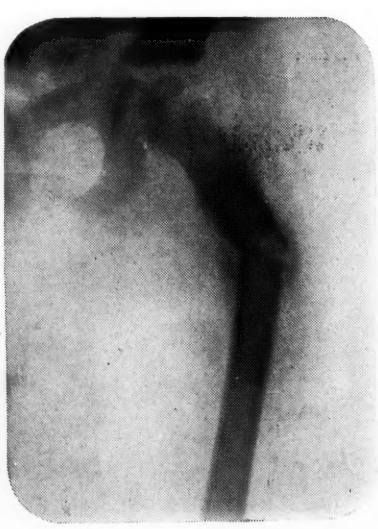


Fig. 14.—Fracture of upper third of femur—five weeks' duration.

Fig. 15.—Same after treatment on abduction frame.

Fig. 16.—Thomas's knee splint for fractured femur.

Fig. 18.—Showing method of extension during operation for fracture with overlapping of lower third of tibia and fibula.

Fig. 19.—Thomas's bed splint applied for fracture of tibia and fibula.

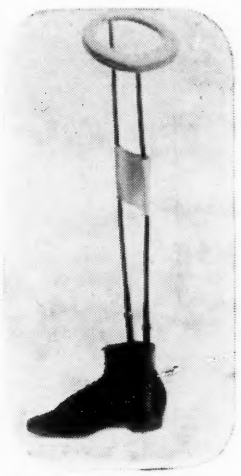


Fig. 17.—Walking caliper.

Fig. 20.—Case showing traumatic eversion after Pott's fracture.

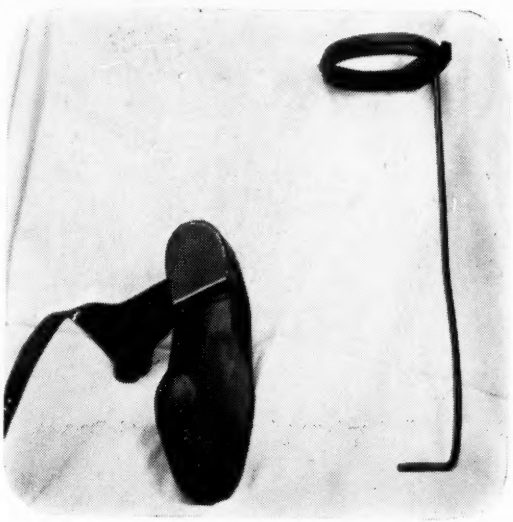
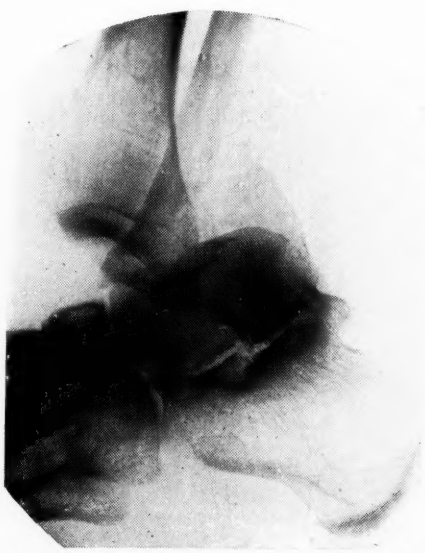


Fig. 21.—Boot showing inner side raised and outside iron.

Fig. 22.—Same when worn—in the after-treatment of Pott's fracture.



ig. 23.—Showing Pott's fracture with dislocation of foot.

Fig. 24.—Same reduced.

Fig. 25.—Showing operation for correction of alignment after malunited Pott's fracture.

Fig. 26.—Fracture dislocation of surgical neck of humerus.

Fig. 27.—Fracture set and dislocation reduced.

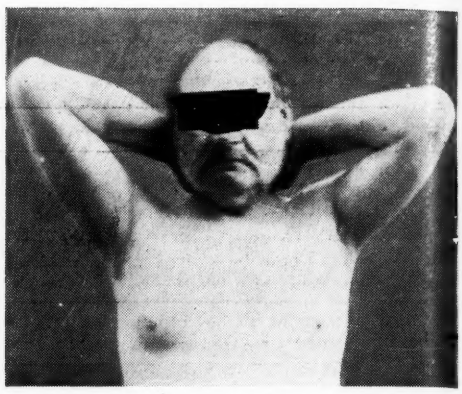


Fig. 28.—Movement obtained.

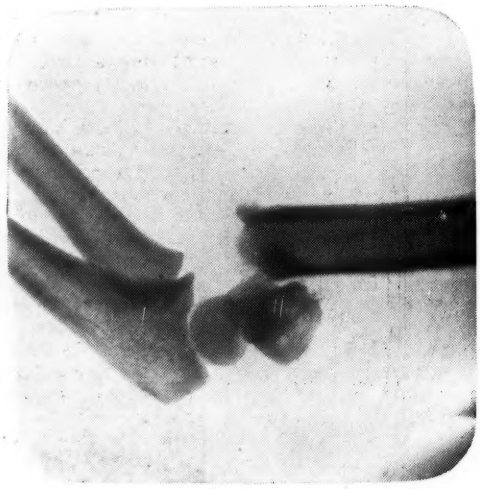


Fig. 29.—Supracondylar fracture of elbow.

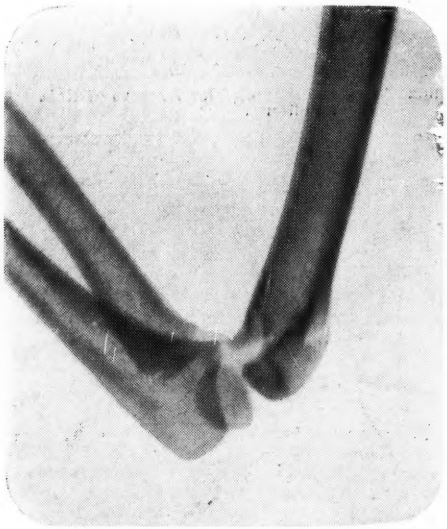


Fig. 30.—Same reduced by flexion of elbow.

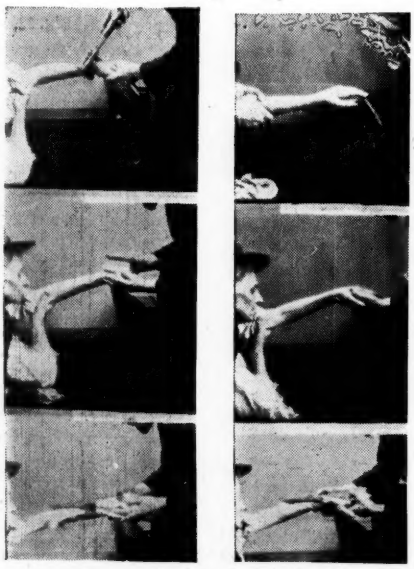


Fig. 31.—Colles's fracture with method of reduction.

Achillis be divided the displaced ankle may even then be restored. Often, however, union is too firm, and operation may be needed to correct faulty alignment. This may be done by an osteotomy through the internal malleolus and through the fibula at the site of fracture.

When the eversion is very marked, a wedge should be taken from just above the inner malleolus, and an open division of the fibula made. The wedge through the tibia need only reach four-fifths through the bone. The wounds are then closed and the stitches removed in a fortnight. The limb is then fractured in order to rectify the error in alignment (Fig. 25). I frequently operate in two stages, both in this and in other malunited fractures and deformities, so that when the limb is fractured as a second stage we have merely to deal with a simple fracture which we can fearlessly subject to any manipulation.

Fractures of the Upper Limb.

In the report on fractures of the upper limb there are some points worthy of comment. Statistics do not seem to throw much light on the vexed question whether or not it is better to operate on fractures of the surgical neck of the humerus, for the percentages of good results are nearly equal by each method.

In fractures through the anatomical neck it is never necessary to do more than place the wrist in a sling and allow the arm to hang by the side. The same treatment may be employed in fracture of the surgical neck when deformity is not extreme. The abducted position is best, however, when it has been necessary to correct extreme deformity by extension in the abducted plane. Passive movement should not be begun too early—certainly not before the fourth week.

The range of movement which may follow severe injuries to the shoulder is shown by the case of a patient of 72, who fractured the surgical neck and also dislocated the head of the humerus (Figs. 26, 27, 28). Mr. Newbolt and I reduced it. The patient had no passive movement for six weeks, and he has recovered with an almost perfect range of movement.

I have so often preached the doctrine of the acutely flexed elbow that I am almost ashamed to return to it. Yet, in face of the valuable lessons of this report, one feels impelled to do so. Over 40 per cent. of failures, both by operative and non-operative methods, are here reported.

Is there any lesson to be learnt from this? The lesson to be learnt is that we must control the direction of our exudation of callus, and we must see that during treatment nothing happens to irritate the joint. The two main obstacles to recovery in function are blocking by callus and stiffness from traumatic arthritis. In the report of Hitzrot, to which I have already referred, he states that out of 52 cases in which the external condyle of the humerus was involved, 51 were treated by hyperflexion, and kept immovably in that position. All had perfect return of function, with no very appreciable deformity. I have for so long advocated this hyperflexed position that it is a satisfaction to find good reports coming from every clinic where this treatment is adopted. If we are to improve our statistics of good functional results we must recognize the hyperflexed and supinated position as our chief ally in the treatment of severe injuries to the elbow. For at least two weeks no alteration should be made in this position, and the first change should be that of lowering the wrist an inch or more. Passive movements should not be begun for at least three weeks. They should consist of only one movement in each direction, and then the arm should be replaced in a sling. This passive movement should be slowly and gently done, the fracture being protected from strain by the surgeon's hand. The passive movement which is so generally practised is positively harmful; it disturbs the uniting fragments of bones, and leads to fresh plastic effusion, excess of callus, and increased formation of connective tissue about the joint, all of which are conducive to increased stiffness.

With rare exceptions elbows will cease to trouble if the acutely flexed position be maintained and if passive movements be postponed. In nearly all the many cases I see with disability and deformity the story relates to rectangular splints, pads, bandages, and early movement. Callus exudation, bony displacement, and organized effusions oppose flexion, whether the elbows are treated by splints in the straight or in the rectangular position. The *x*-ray screen will at once show the advantage of the acutely flexed position (Figs. 29, 30).

In fractures above the condyles good functional results are reported in only 52 per cent. of cases. I have so often stated my views of the evil effects of early passive movement in these cases that I need not refer to it again. I hold the same views with regard to early passive movement in cases of fracture of the lower epiphysis of the humerus in children. I have also often deprecated operation on a growing epiphysis, and am interested to note that the results of operative treatment on these cases are rather worse than in those not operated upon.

It will surprise some to find that in fracture of the olecranon, while operation leads to a larger percentage of good anatomical results, the difference in the percentage of good functional results is very small—77 per cent. to 75 per cent. My experience is fully in accord with the findings of the committee in reference to fractures of the olecranon. It is astonishing what strong arms are often met with in spite of a pronounced fibrous gap. From the point of utility, my wired cases do not surpass those I have treated non-operatively; and unless the fragments are very widely apart the deformity is hardly appreciable. I confine myself to operating upon those cases where the displacement of the upper fragment is accompanied by rotation. The mechanical treatment consists in keeping the arm extended upon an anterior splint and passing a strip of plaster round the lower part of the triceps after having pressed the upper fragment firmly upon the lower. Weak extension is due to a yielding fibrous union resulting in a lengthening triceps. This is directly caused by too early traction on the upper fragment.

The results reported in fractures of both bones of the forearm in children are less satisfactory than they should be, and I think this must be largely due to faulty reposition and fixation. In the subperiosteal type no trouble should occur. The usual angular flexion should be corrected in incomplete supination. The best routine reduction is effected by traction and countertraction in the supinated position. Manipulation of the fragments is more particularly directed to correcting the tendency of the lower fragments to come together. If the fracture is in the upper third of both bones I usually fix the elbow. It is a safer proceeding for those with no great experience in the treatment of fractures to keep the forearm well supinated. The mal-united fracture, as we know, generally results in the forearm being in fixed pronation. If union is slow, it is helpful to fix the elbow in extension, and let the patient walk swinging his arm. The congestion that occurs will promote union. The disability we hear so much of is due to inefficient reduction, excessive callus exudation, and the consequent obstruction to the free movements of the flexors and extensors. The tragedies of tight bandaging are happily rare.

To me the most disappointing results are those relating to Colles's fracture. One could quite understand a pretty general failure to secure a strictly anatomical reposition—but only 57 per cent. of good functional results! Once a surgeon has learnt the method of reducing a Colles's fracture, he will hear no more of stiff or useless wrists (Fig. 31). I know of no easier fracture to manage.

The act of reduction is much easier to demonstrate than to put into words. The surgeon with his left hand (palm upwards) grasps the patient's left arm, placing the tubercle of his own scaphoid against the projecting lower end of the upper fragment; he then places his right hand (palm downwards) with the tuberosity of the scaphoid on the upper edge of the lower fragment, when, by a forcible approximation of both hands, the fragments are replaced in position. In some old-standing cases the use of the wrench may be necessary. The bones are kept in this position by means of metal splints until the third week, when gentle massage is begun. Functional failures are hard to recall. From the third to the fifth week massage should be vigorous. The mal-united cases which come to me are either totally neglected, badly reduced, or have been too strenuously moved almost from the date of accident. To those who have been accustomed to attend my clinics I would refer to the ease with which we are able to reduce Colles's fractures of many weeks' standing in disproof of the absurd contention that a recent case presents difficulties.

CONCLUSION.

This is not the occasion to enter deeply into the ethical problems as to the attitude of the public in regard to fractures. It is nevertheless a question which largely affects us. Patients who call upon me are often armed with *x*-ray prints, which they authoritatively expound. Anything but a faultless end-to-end apposition imparts a warlike spirit. Twelve months ago a cadaverous neurotic called upon me. He unfolded four *x*-ray prints and typewritten notes, with all the gesture appertaining to the criminal bar. The tibia was slightly overlapping. The function of the limb had been perfect for a year, but when he saw the crooked bone he was reminded, he said, of pains which he sometimes felt. He had climbed the Schilthorn since his injury, but would he not be wise in having an operation done?—if so, he was prepared! It would be well to educate the public, as such radiographs are being exploited to the disadvantage of our profession. It should be explained to them that no surgeon in his senses will guarantee an anatomical reposition by mechanical methods, or a functional success by a well conducted operation. The moment the public is brought to believe that a fracture which is not operated upon is evidence of neglect, the peace of mind of the doctor is at an end.

I have ventured to suggest several reasons why we do not meet with infinitely better results than are recorded in the report, and some of these reasons I would briefly summarize.

We should be carefully taught the principles governing the reduction of fractures and their correct fixation.

We should not be out-and-out adherents of an operative, a fixation, or a mobilizing school. We should be shown the value of steady fixed extension, in contradistinction to forcible intermittent pulls succeeded by periods of relaxation.

The value of a correct alignment in conjunction with complete obliteration of shortening should be appreciated. A reduction quite incomplete during the primary anaesthesia may easily be made complete during the following forty-eight hours. This correction is brought about by continued fixed extension, aided by appropriately placed pads; in other instances by approximating the lower to the upper fragment by posture of the limb.

We should study the causes of non-union from the clinical side, and in the application of splints avoid rigid circular compression. Splints should always be wider than the limb they protect. Delayed union in a certain proportion of cases is inevitable. Care must be taken not to carelessly relegate such cases to the more serious class of ununited fractures.

We must realize that the academic period of consolidation authoritatively asserted is not accurate, and that bones which appear firm to the hand will yield after many weeks to the incidence of body weight.

Extensive callus exudation with pain on pressure most probably represents incomplete union.

After having corrected by pulling and manipulation delayed and ununited fractures, the mere change in position and accurate retention will often rapidly bring about firm union. To still further ensure success the bone may be percussed and elastic tubing applied above and below the fracture to produce congestion.

It should be taught that a mal-united fracture interferes with the function of the limb by deflecting the body weight from accurate incidence upon the joints above and below. Treatment should therefore be preventive.

Fractures above the elbow-joint should be fixed in supination and hyperflexion. Passive movements should not be commenced too early, and should be practised in the gentle manner I have indicated. The radial deformity of a Colles's fracture should be completely rectified; the ulnar prominence is of little consequence. For Pott's fracture the displacement of the ankle should be especially overcome and the inversion of the ankle secured. Steps should be taken when walking is begun to maintain the inversion.

In this way, by perfecting our mechanical methods, the necessity for operation will be materially lessened, and we shall almost feel the sense of personal failure when the bone has to be exposed.

The indications for operation will clearly differ from the individual standpoint of the surgeon, and no rules can be laid down. The surgeon with least mechanical resource will operate most frequently.

Personally I operate upon the patella, certain fractures of the head of the radius, certain oblique or spiral fractures of the tibia, occasionally upon the olecranon, and upon any other case which may seem necessary. In mal-united fractures I operate with considerable frequency. In my opinion it is best to operate while the pulley is at work.

The authors of the report call upon us to bear in mind "that the operative treatment of fractures is yet in its infancy. . . . Non-operative treatment, on the other hand, is thoroughly established." This statement should be modified, for in a progressive science nothing ever is thoroughly established. Before we reach to new things we must ask ourselves if we have done the best by the old; and it is only by being critics of our own work that we can discover, each for himself, which procedure will in his own hands give the best result. We owe a debt of gratitude to Arbuthnot Lane. He has roused the surgical world from apathy on this question, and I feel assured that the reawakening will be to our common good, to the perfecting of our mechanical methods and the improvement of our operative technique.

The Bradshaw Lecture

ON

THE BIOLOGY OF TUMOURS.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

BY C. MANSELL MOULLIN, M.A., M.D.OXON., F.R.C.S.,

CONSULTING SURGEON TO THE LONDON HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—I am not going to attempt a definition of the word "tumour." I do not think that it is necessary; the time at my disposal is far too short, and I shall not employ the term in any but its most ordinary acceptation. The structures to which I refer are the growths, familiar to us all, that spring like buds from the normal tissues of the body, the texture of which they imitate more or less closely, draw all their nourishment from them, recognize no limits of size or shape, and never serve a useful purpose of any kind. They are so common that there is scarcely an adult without one, and they become so much more common as age advances, that in old people they can often be counted by the score.

ABSENCE OF ANY NATURAL LINE BETWEEN SIMPLE AND MALIGNANT GROWTHS.

Nor shall I attempt to draw any hard and fast line between innocent and malignant tumours. There is no such line. Nature has never drawn one, and though, for our convenience, we separate tumours from each other, and group malignant growths together upon one side and innocent ones upon the other, between the two there is a borderland of which no man can say to which side the growths belong, nor even whether they do not belong at one time to one side and at another to the other. Every kind of so-called benign tumour, as Bland-Sutton has shown, contains varieties that shade away indefinitely from the type species and at times become malignant. Malignancy is a purely clinical term, and metastasis is merely an accident of growth, absent from what are called benign tumours, not because the cells of which they are composed would not grow if they were disseminated, but because, owing to their having reached a more advanced stage of organization, they can no longer exercise their primitive power of detachment and autotransplantation, and therefore never are disseminated unless it is done artificially. The presence or absence of clinical characteristics such as these is not a satisfactory criterion for the classification of pathological growths. The system may have served in days gone by, when facts were few and little was known, but it should be abandoned now.

TUMOURS COMMON TO ALL ANIMALS.

And I shall not confine myself in what I have to say to the tumours that occur in man. Every kind of tumour is met with in other animals, especially in those in which, from domestication, or for other reasons, life is prolonged beyond the procreative age. So far as the biology of tumours is concerned, man is merely a highly specialized and much studied member of a class of mammalian vertebrata distinguished from all others by the ancient zoologists, not perhaps without a suspicion of humour, as *Homo sapiens*. As such I shall think and speak of him.

NO PROOF THAT TUMOURS ARE CAUSED BY PARASITES.

No proof has ever been brought forward that the structures commonly spoken of as tumours, simple or malignant, are caused by parasites. All that can be said of them for certain is that they grow out from normal tissues like buds, which refuse to be bound by the laws that control the development of the rest of the body. Their behaviour is that of foreign growths, parasitic on the tissues, and their presence is resented and resisted by the tissues among which they lie exactly as if they were foreign growths.

THE ORIGIN OF TUMOURS IN GROWTH UNCONTROLLED BY DEVELOPMENT.

A cell, or a group of cells in some particular part of the body, suddenly breaks off all relation with the rest. Development stops then and there. All idea of function disappears. Henceforth the cells in question never do any work or perform any duties. They have shaken themselves free from all responsibilities. All that they do is to grow and multiply until they build up a formless, shapeless mass, composed of elements resembling in general appearance the tissues from which they have sprung. The only faculty they retain is that of growth—a faculty common to all living tissues, so long as they are living; and the measure of their growth is only limited by the supply of food. So long as this continues good, no matter how the rest of the organism fares, they will continue to grow. But the growth of tumours differs from that of all other living structures in that it never serves any useful purpose. Tumours increase in size without aim or object. The cells of which they are composed are functionless. Like true parasites, tumours draw all they require for themselves from the rest of the body, give nothing in return, and thrive while it is being starved. They are the offspring of tissues that are no longer controlled by the laws that govern the growth and development of the body. The first thing, therefore, in considering the question of their biology is to try and form a clear idea of the nature of these laws, their origin, and how it is they can be set aside in this way.

THE LAWS OF DEVELOPMENT.

Their origin dates back almost to the beginning of all things, if not actually to that time when life made its first appearance upon earth, at least to a period so immeasurably remote that it is not in the power of our minds to form a conception of its distance. They came into being when the metazoa came into being, when for the first time the daughter cells of some primitive organism, failing to separate from each other after the parent had divided, as always had been done before, gained the advantage of combination over their fellows and founded the new kingdom. Immeasurably distant as that time is, for the oldest known of these living creatures, already very highly organized, are covered by 60,000 ft. of solid rock that has been deposited since they lived, there has been no change since. The laws that regulate the development of *Homo sapiens* now are the same as those that regulated the development of the hydra or its representative then. Each little mass of cells, consisting, it may be, of only a few units grouped together, whether it constituted the body of some primitive metazoon living in a remote geological epoch, or is formed by the division of a mammalian ovum at the present day, obeys these laws.

The Division of the Primitive Organism into Germ and Somatic Cells.

One of the chief factors that serves to distinguish living organisms from inert matter (though some doubt has been thrown upon this recently) is their power of absorbing and assimilating foreign material, in virtue of which they are able to replace the constant waste of living, increase in size, and, when the limits of size are reached, increase in number. Their one aim and object, if such language can be allowed, is to sustain the germ of life and hand it on unimpaired in strength and vigour from generation to generation. In the simplest forms, and in the earliest stages of those more complex, all parts of the organism are endowed with equal powers. Every cell is capable of maintaining its own life, and every cell is capable, either by dividing or by throwing off buds, of maintaining the life of the race. What Weismann called the germ-plasma is shared by all alike. Very soon, however, both in the history of the race and in that of the individual, in accordance with the universal law of the division of labour, a distinction makes its appearance. The cells that compose the organism separate into two groups, distinguished from each other by the differentiation of their work. One of these becomes the germ organ, consecrated to the formation of living germs and the perpetuation of the life of the race. The other, which comprises all the rest—the somatic cells, as they may be called—furnishes the groundwork from which are built all the organs and tissues that are needed for the preservation of the life of the individual. In the smallest as in the largest, in the simplest as in the most complex, all the tissues of all the organs used in everyday life, whether the organism consists of an almost structureless body, such as that of the primitive hydra, or is elaborated to the degree of perfection that is reached in man, are formed and developed from these, the somatic cells.

At the first there is no difference that we can detect between the two kinds of cells. In the primitive metazoa, and in the earliest stages of the development of those ova in which such a question can be studied, one kind of cell can be made to replace the other, and undertake all its work. The two still possess equal powers. But as the differentiation of function advances the divergence soon becomes complete.

The Germ Cells.

From this time forth the whole energy of the germ organ is devoted to the production of ova, and the perpetuation of the race. It does nothing for itself. Supported and sustained by the structures formed out of the somatic cells to which it has given birth, it thrives and grows that it may transmit to the germs of the next generation all the powers it has inherited unimpaired. The race is continued without a break and generation succeeds generation; but except in the case of a few strange forms which seem to have persisted almost unchanged from time immemorial, the succeeding one is never quite the same as those that have gone before. There is always some modification introduced, however slight. No generation is exactly the same as that which preceded it. The daughter germs may appear to be exactly like the parent, but they never really are. Every germ cell before it divides or throws off a bud to form the daughter cell is modified in some way, be it ever so little. The somatic cells around it, upon which the maintenance of its life depends, themselves influenced by the ever-changing conditions around, cannot help influencing the germ cells in their turn. Always, therefore, before the germ cell is ready for division, it has become in some infinitesimal degree different from the parent that gave it birth; and thus, though the continuity of the germ plasma remains unbroken from the earliest ages to the present time, the germ cells, and through them the structures built up around them out of the somatic cells to which they give birth, little by little become modified, and transmit their modifications from generation to generation, until at last the forms produced are far different from those that first came into existence, and far more complex. Countless offshoots from the parent stock have been thrown off in the course of ages in all directions. Some of these, either because the supporting structures formed by the somatic cells around them became ill-suited to the requirements of the age, or because the vitality of the germ cells failed after a time, have died away and disappeared, leaving merely fossil remains of the skeletal supporting structures to show what manner of beings they were. Many, with infinite variety of structure, ranging from the simplest blastulaform to that of man, persist still. New ones, even more complex, may perhaps be forming at the present

day. But whatever the framework formed by the somatic cells around them, the germ cells upon which the maintenance of the race depends are all direct descendants of the germs of the original primitive metazoa, and obey the same laws of growth and development.

The Somatic Cells.

On the other side of the picture, in contrast with these, are the somatic cells whose mission it is to form the framework for the support of the germ organ and the maintenance of the life of the individual. These at the first were in all respects the equals of the germ cells. Like these they possessed the power of producing germs and of transmitting to their descendants all the properties they had inherited or acquired. But, as inevitably happens when specialization begins, as the somatic cells became more and more perfect in their own particular line of work, their other powers began to wane. The first to disappear was the power of producing living germs that should serve for the perpetuation of the race. In the primitive metazoa all parts alike possessed this power, but at a very early period, even before the days of the fresh water hydra, it had already become restricted to one small region of the body. This was marked off from the rest as the germ organ, and henceforth the power of forming ova was confined to this alone.

The next that was lost was the power of reproducing not the race, but the individual. In many of the lower forms of life, buds which are capable of developing into individuals as perfect as their parent can develop from parts of their body composed entirely of somatic cells. This, for instance, is common among Coelenterata, and even among animals so highly organized as marine worms, many of which are capable of throwing off fully developed offspring from indifferent segments of their own body. Traces of this power may be found among animals far more highly organized than these, but only in the very earliest embryonic stages of life. In adult age, when differentiation has advanced further, reproduction of the individual from the somatic cells never takes place. With the loss of this disappears finally all power of hereditary transmission beyond the individual. The somatic cells may still reproduce their kind, and transmit their qualities to other cells within the limit of the individual, never to the race.

Long after the power of complete reproduction has been lost the somatic cells are still able to reproduce parts of individual organs or portions of the body that have been destroyed or injured. Whole limbs and other appendages, for example, can be regenerated among crustacea; and, though in a much lower degree, there is evidence of the same power even in animals so highly organized as the Lacertilia. The curious little projections that occur sometimes in the human embryo, growing on the site of limbs that have been lost early in uterine life, may quite possibly admit of a similar explanation.

The next stage, that in which the somatic cells have lost the power of reproducing individuals and organs, but can still reproduce tissues similar to themselves, extends to a much later period both in the history of the race and of the individual. Comparatively extensive losses of simple tissues may be made good during embryonic life even among vertebrata; but as age advances this power, too, diminishes. In the adult it can be exercised only to a very limited extent, and in the case of the most highly specialized tissues, such as nerve and muscle, it is doubtful if it can be exercised at all.

Finally, all that is left to the somatic cells, all that remains of the powers they originally possessed equally with the germ cells, is that of simple growth, the ability to maintain size and structure unimpaired in the face of constant waste. Throughout, from the beginning of all things down to the present time, whether the development of the race is considered or its epitome, as shown in the development of the individual, the process is the same. As specialization and differentiation advance, as the somatic cells adapt themselves to the work of forming the structures upon which the maintenance and protection of the germ depend, step by step they lose all the power of reproduction and transmission to the race they originally possessed, until they retain only that of simple growth. The support of the germ organ has become the sole object of their lives. Everything else is given up, that this may grow and bring forth living germs for the next generation each of which will in its turn build up a supporting framework to serve the individual for the time being, and then be thrown away. The somatic cells themselves, and all the organs and tissues formed from them, no matter how complex or how highly specialized they are, are sacrificed each generation and destroyed. Their purpose is achieved when once the new germs are able to build up a protecting framework of their own. They may die at once, as in the case of many insects, where the procreative act is followed immediately by death; or if it is for the benefit of the race, if they possess qualities that will be of advantage to the coming generation in the battle of life, as, for example, in the case of mammals, they may be continued a little longer, but the end is the same. The protective framework built up out of the somatic cells to serve the generation perishes with the generation; the continuity of the germ is preserved, to produce in each generation a framework for its own support, moulded, with more or less of modification, on the plan of those that have gone before.

The destiny which thus awaits the somatic framework is looked upon as quite natural where the simpler forms of life are concerned. When the next generation with its inheritance of living germ plasma is ready, the parent dies. Its mission is at an end. Its work is done and it disappears. But it is equally true of the more complex forms, no matter how highly placed in the scale of organization they may be; and it is true not only of individuals, but of communities of individuals which have grown up and developed under the rigid and pitiless laws enforced by Nature, in which sentiment has no place. Nowhere, perhaps, is there a better illustration of this than in the case of the honey bee, in which, as Tickner Edwardes has put it, the subordination not only of the individual but of the community to the conservation of the race seems to be pushed to its logical conclusion. Everything is subordinated to this one object. The lives of individuals are sacrificed wholesale under inexorable laws, if only it is for the good of the community. The aim and object of existence is the rearing of offspring, which in their turn shall devote themselves to rearing other offspring. There is a perpetual procession, in which each individual works and spends his life for some other individual, who will succeed him, and who in his turn will do the same. The individual is nothing, so long as the community prospers, just as in the living body the individual somatic cells and the structures formed out of them are nothing so long as the germ can fulfil its mission.

The Origin of the Laws of Development in the Mutual Relation of these Cells.

Whether the organism is a primitive metazoon which will never attain a higher stage of organization, or an ovum that will develop into the most highly specialized of mammals, the force that regulates and controls its development, as distinct from the power of growth, which is an inherent property of its cells so long as they are living, is the mutual influence that these germ cells and somatic cells exert upon each other and upon their fellows, compelled thereto by the differentiation in their work. It is this influence, working with the driving force of inheritance through countless ages, modified in some infinitesimal degree by the surroundings in each individual case, that frames the laws that guide and control the development of the body and the tissues that compose it.

THE ORIGIN OF TUMOURS.

Tumours do not obey these laws. They are tumours because they do not. Whatever their structure, their growth and development are not conditioned in any way by the growth and development of the rest of the body. The degree of perfection to which they attain depends upon that of the tissue from which they spring, and the rate of their growth partly upon this, partly upon the supply of food they can get. Whatever their origin no relation, such as that which holds good between the germ and somatic cells, ever exists between them and the parent body. They simply live upon it like parasitic growths upon a host.

Tumours from Germ Cells.

As there are two kinds of cells developed in the course of evolution with gradually diverging functions, so there are two kinds of tumours, one springing from the germ and

the other from the somatic cells. With the former I shall not deal at any length. They may arise in various ways. Some are the product of fission of the primitive germ. In such a case, if the two halves contain an equal proportion of germ cells, and if they become separate from each other in the course of growth, two equal and perfect individuals result. Others originate by a process of unequal fission or gemmation, the formation of a more or less perfectly developed bud which grows out into a structure sometimes almost as complex as the parent. Others may be caused by the detachment and displacement, perhaps by accidental violence, of a few of the germ cells, which either remain *in situ* or are buried deep among the somatic cells and then begin to develop; and others, again, especially those which originate late in life, may be the result of some as yet unknown stimulation of germ cells that are lying latent in the germ organ. But whatever the mode of their origin, the essential feature of these tumours is that they are outgrowths from germ cells, and therefore possess, in greater or less degree, the same powers as all such outgrowths. The germ cells have been over-stimulated in some way, or over-fed, or injured, and as a consequence give birth to these irregular structures instead of, or in addition to, the natural ones. The difference between them is one of degree, not of kind.

Like the normal structures that are produced from germ cells, these abnormal ones form their own somatic framework, though, as might be expected, this differs widely in the degree of its perfection. At one end of the scale there may be a complete and separate individual, in all respects as perfect as the parent one, capable of maintaining itself and of perpetuating the race. At the other end, because the germ cells are either few in number or have lost much of their germinal power, there may be merely an irregular mass, a dermoid, built up out of the wanton over-production of epiblastic cells. In either case the different cells that compose these structures bear to each other within the limits of that structure the same relation (so far as their development will allow them) as that which exists between the different cells of the parent body. But no such relation ever exists between them and those of the parent. Except that they draw their food supply from it and give up their waste products to it, the cells of the tumour own no connexion of any kind with those of the stock from which it grew. They neither influence it nor is it influenced by them. Their relation to it is that of an independent organism, developed independently from the germ cells, deriving its nourishment from the parent in the same way that a parasite or a foreign growth might, or in a few exceptional cases absolutely and entirely separate.

Tumours from Somatic Cells.

Putting upon one side these, which are comparatively rare, all the rest, forming the vast majority of what are commonly called tumours, originate by a process of budding from the somatic cells after their differentiation from the germ cells has taken place, or from structures developed from them. These tumours owe their origin not to the action of germ cells, but to the release from control of what is left of the power of reproduction which the somatic cells originally possessed in equal degree with the germ cells, but which was suppressed as these cells became specialized for the support and maintenance of the germ organ.

A few of these tumours make their appearance very early in life, at a time when specialization is not yet far advanced and the powers the somatic cells originally possessed are but slightly impaired. They grow out as buds, which in some instances attain such a high degree of complexity that they will stand comparison with those I have already mentioned as originating from detached portions of the germ organ. Indeed, it is not always possible to say that this is not their real origin, and that their apparent descent from somatic elements is not actually due to their having originated from detached portions of the germ organ that have been accidentally displaced and buried among somatic structures. A few others take the shape of organs or parts of organs growing out as buds from the extremities or other portions of the body that develop comparatively late. Theoretically, these should be capable of being distinguished by the date of their appearance, but the early stages of the development of the mammalian ovum are so much compressed, and represent in the course of a few hours such an infinity of ages spent in the evolution of the race, that it is not possible to draw distinctions of this kind.

All these tumours, however, are comparatively rare. The total number is very small in comparison with that of what may be called ordinary growths. They nearly all originate early in life, though they may not always make their first appearance then, and they stand apart in a class by themselves. By far the greater number of the tumours that are developed from the somatic structures grow out as buds much later than this, long after the early stages of life have been passed and the differentiation of the tissues completed, and become more and more common as age advances. These rarely consist of anything more complex than simple tissues. The cells from which the buds originate have already reached such a high degree of specialization that they have lost the power of forming everything except tissues somewhat like themselves; more elaborate reproduction is no longer possible. If the parent cells have already reached their final adult stage the increase in size of the budding tumour is very slow. If, on the other hand, they are still immature and capable of rapid multiplication like those, for instance, that are present, often in considerable numbers, both in epithelial and mesoblastic structures, for the purpose of replacing the losses caused by the wear and tear of everyday life, or the destructive action of persistent irritation, growth may be very rapid. In the one case the resulting tumour is built up of tissues that have practically attained their full development; its increase in size is slow, and it never invades the rest of the body. In the other it consists of cells which retain so much of their primitive energy of growth that, if once released from the restraint of the laws that would compel their further development, they grow and multiply in a manner only surpassed by the cells that compose the germ layers of the embryo. They increase without limit, and without an attempt at higher differentiation, and they spread everywhere in the directions of least resistance, partly of their own efforts, by a process of autotransplantation, partly carried along in the blood stream, or in the lymphatic channels, and unless destroyed as foreign bodies by the tissues among which they lie, they reproduce their kind wherever they come to rest.

The Principle underlying the Growth of Somatic Tumours.

Whatever form is assumed by the tumours that originate from the somatic elements or the structures derived from them, the underlying principle of their growth is the same. The power that would compel the higher differentiation of the cells that compose them ceases to act. The cells that form the tumour bud cease to develop further and never do any work. They cease to bear any relation to the rest of the body, except that they draw their food supply from it and give up their waste products to it. They do not influence other tissues in any way nor are they influenced by them. They continue to grow and multiply, perhaps with all the greater energy because the force that would have been consumed in raising the cells to a higher plane of differentiation is available now for growth. The tumour cells go their own way, never rise to a higher plane, never do anything for the rest of the body, but, like parasites, devote the whole of their energy, which should work for the common good, to their own increase in size and number. What remains to them of their primitive reproductive power is released from all control and guidance.

How is it that the tissues at one small spot in the body are suddenly able to assert themselves in this way? How is it that almost from one minute to another they can shake off all allegiance to the other tissues, and, except that they are dependent upon the rest of the body for their food, grow upon it, entirely independently of its growth, and thrive while it may starve? How is it that from normal tissues, doing their normal work, they can suddenly develop into structures like parasites that drain the body of its sustenance and do nothing for it in return?

The Controlling Power of Hereditary Transmission.

There is only one answer to questions such as these. The progressive development of the organs and tissues of the individual, as of the race, is the outcome of the mutual relations that have been built up in the course of ages

between the infinite variety of cells of which the body is composed, transmitted from generation to generation. Environment and the actual working of the organs and tissues in the individual are but forces of the moment. The real controlling power is the hereditary transmission of the relations which the different parts of the body have exerted upon each other through immeasurable time, and which have been handed down in ever-increasing number from countless ages. It is this that directs development and differentiation, and keeps growth in check. If it fails from any cause, or if it is overpowered by the forces of the moment, whether they form part of the environment or originate in the body itself, development and differentiation come to an end, organs fail to attain their normal perfection, and tissues remain at that level of specialization at which they happen to be at the moment, incapable of work because of their imperfect development, but with their power of growth not only intact, but released from all restraining influence, and, it may be, even increased in vigour.

To put it very crudely, the tissues have become what they are in virtue of the accumulated effect of all that they have done for the rest of the body, and that the rest of the body has done for them through countless ages. Their differentiation is the outcome of the work of their predecessors. Each cell, as it comes into being, has its destiny marked out for it by virtue of the relations it bears to the rest. It is bound by the force of heredity to develop in one direction, and to reach a certain stage of perfection, that it may be able to carry on its work. But sometimes, just as the development of an organ is arrested without its power of growth being impaired, so the differentiation of a budding tissue may be arrested, and its power of growth be left unimpaired. Somewhere, in some part of the body, the force that should compel the evolution of the reserve cells, or of those young cells that are constantly being formed to take the place of those worn out, suddenly ceases to act. All progress comes to an end. It may be at an early stage, while the young cells still retain all their embryonic vigour; or it may be late, when they have all but reached their final form. In either case growth continues unimpaired, because growth and its consequence, increase in number which is the outcome of continued growth, are in no way dependent upon these relations. The work the tissues have done in the past has no influence over their power of growth except through the differentiation it induces. Growth—ceaseless, continuous growth—is a property inherent in living structures, so long as they are living—a property which is controlled and moulded by advancing differentiation, but which, if differentiation is checked, especially in its earlier stages, is capable of reasserting itself with all its old energy, or even with increased energy, as the force which would have been consumed in carrying specialization to a higher plane is now available for growth alone. The result is a tumour—an irregular formless mass of badly differentiated tissue which grows independently and continuously, which does not acknowledge any obligation, or do any work, and is so much a foreign element among the tissues in which it lies that its presence is resented and resisted by them in proportion to the activity with which its size increases.

If the power of hereditary transmission continues unimpaired throughout life, the development of the tissues is perfect and remains perfect; their work is properly carried out, and all the complex relations existing between them are maintained intact. If, on the other hand, it fails, as it may fail in advancing age from mere lapse of time, or when, owing to the long persistence of some local irritation, there is a very rapid production of myriads of young cells, the evolution of the tissues stops, it may be early in their life-history, or it may be late; growth continues, and the product becomes a tumour which continues to increase in size with a rapidity that depends upon the degree of differentiation already attained by the cells from which the bud first grew, and the supply of food that they can get.

It may be the fault of the tissues at that particular spot, and the origin of the tumour be purely local, as in the case of growths caused by x rays or by soot, agents which seem to be capable of making such tumours as papillomata and epitheliomata grow from the epidermis in any part of the body, in any person. Or it may be in some measure the fault of some other structure, perhaps far distant, with which the tissue from which the tumour springs stands in some working relation, and only the locality be determined by the local agent. In either case the essential feature is the cessation of the progress of differentiation and the removal of all restraint upon growth. Something—some one of the forces of the moment—has disturbed the relations that have been evolved in the course of ages between these particular cells and the rest of the body. The differentiation of the tissues which these relations have built up step by step through countless generations comes to an end; growth continues, and a tumour is formed.

Tumours due to Involution Changes.

Nor does this explanation hold good for those tumours only that spring from the somatic cells and are formed of more or less highly differentiated simple tissues. It is no less true of those strange growths that sometimes develop from fetal or embryonic relics, such as the post-anal gut, the thyroglossal canal, and many others. The hereditary transmission of the relations that have grown up between the various tissues of the body and of the structural features that have been produced by them, implies not only the progressive advance of those tissues that are of use, but no less, also, the recession and disappearance of those that have ceased to be of use. Evolution stops when the power of hereditary transmission fails; but so also does involution. Fragments of organs that should disappear and be absorbed persist, and, continuing to grow and to work after a fashion, become the nucleus of what are sometimes colossal tumours.

The Inheritance of Tumours.

In this way, moreover, and in this way only, is it possible to account for the apparent inheritance of tumours. Tumours, like other acquired features, are not inherited, yet there can be no question that certain families are much more prone to the formation of tumours, and of particular kinds of tumours, than others. It is well known how the power of hereditary transmission varies in strength in different families. Some special features are handed down unchanged from one generation to another, while others can scarcely be traced. The same thing is true of the tissues that build up those features. In some the hereditary power is so strong that they maintain throughout life the full perfection of their development, and growth is never allowed undue licence. In others the power is weaker and fails to a greater or less degree. Then if by any chance that part is exposed for a sufficient time to the action of one of the forces of the moment, so that, for example, it is necessary that the tissues should be replaced with great rapidity, the evolution of the young growing tissue stops because the driving power has failed, and growth, freed from its control, asserts itself with all its energy. It is not the tumours that are inherited, but the strength of the driving force that directs development and controls growth. This, in the case of some particular tissue, may fail in several members of the same family for generation after generation, just as may the transmission of some special feature.

The Simultaneous Growth of Tumours.

This, too, explains the well-known liability of homologous tissues to become almost at the same time the seat of similar tumour growths. Such an occurrence is most common in connexion with non-malignant tumours such as fibromata and lipomata, but it is not confined to these. I have known, for instance, duct carcinoma develop at the base of the nipple in both mammary glands within three months. The strength of the power which has guided the differentiation of the tissues through immeasurable time, and which controls their inborn capacity for limitless growth, is naturally the same in tissues of similar descent. It maintains its control, or it fails before the action of the forces of the moment in the same way in them all.

As it is the work of the tissues, their own and that of past ages, that step by step has made them what they are, it has been suggested that it is something connected with their work that cuts their evolution short and allows their power of growth to assert itself unchecked, and that the origin of tumour buds is to be found in a functional disorder of some kind. But while it is quite true the tissues that compose tumours never do any work, the failure to work

is the consequence, and not the cause, of the arrest of evolution. Tumour tissues are imperfect, and remain imperfect, and work cannot be expected of such. Their differentiation has been arrested before they were capable of work. Tumour tissues never work because, with the rarest possible exceptions, they never reach the perfection of maturity. The exception proves the rule; a few mammary adenomata attain such a high degree of perfection that secretion has been known to take place in certain portions of them. The vast majority falls far short of this.

The Arrest of Development of Organs.

If it is asked what could interfere with the power of hereditary transmission to such an extent as to cause the arrest of the differentiation of the tissues in one part of the body and the formation of one kind of tumour, or the arrest of their involution in another and the formation of another kind, I can only point to the analogy of the arrest of development of organs, and say that I can see no reason why such a power may not fail from mere exhaustion, as for instance in old age, either of organs or of individuals, when it is notorious that the liability to tumour growth becomes greater and greater, or from excessive action, as when an enormous number of young cells is produced with great rapidity in response to some persistent chronic irritation. Whether the action, or want of action, of any organ in the body could have a similar influence over the power of hereditary transmission and bring its work to a sudden stop it is impossible to say. There is one structure in the body at least that appears to be capable of abrogating the laws that control the growth of tissues and of enabling them to increase in size without limit; but we know too little of these things as yet. The study of physiology is of yesterday. At our best we have only a very general acquaintance with some of the most conspicuous individual actions of what may be called the gross mechanical apparatus of the body. We know next to nothing of the essential organs of life, those that really matter where growth and development are concerned. We are only just beginning to grasp the fact that many absolutely insignificant-looking structures, some of them almost microscopic in size, possess the most extraordinary power over growth, and even over life itself; and we are only just beginning to realize that no organ or tissue in the body exists for itself alone, but only in relation with every other organ and tissue. It may be that when we know more about these things some structure will be found which has some control over hereditary transmission and the development of tissues as distinguished from their growth. Until then—and it must be admitted the prospect is not a good one—all our hopes of finding such a thing as a cure for the growth of tumours (for amputation, though it may free the patient from the consequences, can in no sense be regarded as a cure) must rest either upon finding some remedy which, like Coley's fluid, can directly kill the tumour cells without endangering too greatly the vitality of the normal tissues, or upon stimulating to increased energy the normal tissues that surround the tumour until they are able to treat those degenerate cells that have failed to attain their full development and have continued to grow at the expense of the organism without being of any service to it, in the same way that the workers treat the drones.

DR. EDGAR BATES has examined all the children in the Dee and Washington schools of Ogden, Utah; 890 pupils were tested with the illiterate card, and 184 were found to be suffering from eyestrain. Of these 134, or 73 per cent., had headaches; 114 complained of symptoms originating in close work, and 57 of them stated that words became blurred; 34 had blepharitis. A gradual increase of cases was noted from the kindergarten up to the highest forms. Many of the pupils stated that their symptoms were first noted after an attack of measles or scarlet fever. Some of the children who complained of eyestrain were wearing glasses, but they had been fitted by an optician without the use of a mydriatic, which Dr. Bates considers futile; most ophthalmologists will subscribe to this opinion. In reading this paper, which appears in *Ophthalmology* for January, 1912, it is necessary to remember that eyestrain is far more frequent in America than it is here, and also that leading questions as regards headache were put to the children.

THE FUNCTIONAL NATURE OF THE CAECUM AND APPENDIX.*

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EVERY year the opinion gains ground that the great bowel, from appendix to rectum, has become, so far as man is concerned, a useless and dangerous structure. Exactly ten years ago (October, 1902) Dr. Barclay Smith[1] of Cambridge gave a clear expression of this new conception.

> "If there is any truth," he wrote, "in the suggestions offered in this paper, they have an important practical application as regards the large intestine of man. From the nature of his diet a reliance on extrinsic digestive aid as is furnished by bacteria is no longer a physiological necessity. The statement is perhaps a bold one, but I am convinced that the large intestine is practically a useless encumbrance to him."

In the following year (1903) appeared Metchnikoff's famous book on *The Nature of Man*.[2] In that work (p. 69) the new conception receives a more decisive statement:

> It is no longer rash to say that not only the rudimentary appendix and the caecum, but the whole of the large intestine are superfluous, and that their removal would be attended with happy results.

Before either of these statements had been made, Mr. Arbuthnot Lane[3] had reached the conclusion that the human caecum and ascending colon served, in a certain class of cases described by him, as a "cesspool," and put his new conception into practice either by excluding the great intestine from the digestive tract by "short-circuiting," or, at a later date, by its complete excision. The result of his operations shows (1) that life is possible without a great intestine; (2) that in certain cases the conditions of life are improved. It is very apparent that Mr. Lane's pioneer operative measures are finding every year an increasingly wide application, and that the views of Metchnikoff and of Barclay Smith are gaining in acceptation amongst medical men.

Theories regarding the Uses of the Caecum and Colon.

If these statements are well founded—if the great bowel is as useless and injurious as is said—then medical men are face to face with a condition which threatens the health and survival of modern civilized races. Before assigning so large a part of man's digestive tract to the list of his useless structures, it will be well to inquire what we know regarding the function of the great bowel as a whole, and the uses of its parts in the various members of the animal kingdom. Such an inquiry brings home to us that our knowledge of the function and significance of the great bowel is vague and unsatisfactory. We do not know, in any animal whatsoever, the exact function or functions of the great bowel; so far we have only guessed at them.

The subject is one which engaged the attention of John Hunter; in his collection there are many specimens which illustrate the structure of the various parts of the great bowel in all classes of vertebrates, but unfortunately he left only the briefest record of the conclusions he had formed regarding their uses. "If we could understand," he wrote, "the use of the ileo-caecal valve, then we should understand the uses of the caecum."[4] He observed that there was a material difference between the contents of the ileum and of the caecum; the contents of the caecum and colon underwent putrefactive changes, and in his opinion the ileo-caecal value was to prevent the putrid contents of the caecum from regurgitating within the ileum. In a case of gun-shot wound of the abdomen he observed that the colic contents had passed upwards in the ileum, a result which he supposed might be due either to a lesion of the nerve supply of the bowel or to a reversed action of the intestine. In the light of our modern knowledge it is interesting to note he had observed that the colic contents were not putrid at birth nor did the caecum of the newly-born contain gas. He was also familiar with the fact that the caecum was small, the colon short, and

* Abstract of a demonstration at the College.

the faeces of thin consistency in carnivora and allied animals, while the opposite was the case in vegetable feeding animals. Further, he recognized that animals with a perfect gastric digestion, such as ruminants, had comparatively small caeca, while in others, like the horse, with an imperfect gastric digestion, the caeca were large. He therefore recognized, a very important fact, that there could be an interchange of function between stomach and caecum. The task of describing and interpreting Hunter's specimens fell to Sir Richard Owen. The conclusion he drew from an examination of the series of specimens which illustrate the anatomy of the ileo-caecal region of the bowel was:

> Comparative anatomy concurs with the results of undesigned experiments, as in cases where artificial openings have been established in the human intestinal canal, in showing that a change to gastric digestion is repeated upon the food in the caecum; chemistry has also shown that the chyme here again becomes acidified, after having been neutralized by bile in the small intestine.[5]

Both Hunter and Owen recognized that the process of digestion underwent a sudden and decided change at the ileo-caecal orifice, but neither the one nor the other suspected that the digestive process was the result of a putrefactive action. That discovery, of course, belongs to modern times.

Reference has already been made to a paper[1] which Dr. Barclay Smith published ten years ago, one which has not received the attention its importance deserves. The theory formulated there has the merit of seeking to explain the anatomy of the ileo-caecal region. His theory is based on the justifiable assumption that all the digestive changes of food within the great bowel are due, not to any digestive secretion, but to the action of bacteria which find a permanent abode in the caecum and colon. He inferred—an inference which has been justified by the observations of Dr. Hertz[6]—that the antiperistaltic movements which Dr. Cannon[7] had seen to occur in the colon of the cat also occurred in the upper part of the human colon, and that the purpose of the ileo-caecal valve was to prevent the contents of the caecum and colon, which were undergoing bacterial digestion, from being forced by the antiperistaltic movements within the ileum, where a totally different digestion was in progress. So far as I know, this was the first satisfactory explanation offered for the presence of an ileo-caecal valve. Dr. Barclay Smith looked on the rich distribution of lymphoid tissue in the ileo-caecal region as stations furnished to protect the body from invasion by the bacterial hosts employed in the purposes of caecal digestion. He made the further assumption, which may or may not be warrantable, that our modern diet needs no bacterial action for its full digestion and assimilation, and that therefore the great intestine is a useless and injurious structure in the economy of modern man. Excision, however, is not the only remedy. There is an option; in place of appealing to surgery to adapt our digestive tract to our present dietary, it seems possible that we may discover a diet which is suited to our present digestive tract. Before we can do that, we must know something of the normal processes of digestion which proceed within the great bowel, not only of man and of animals allied to him, but of vertebrate animals generally.

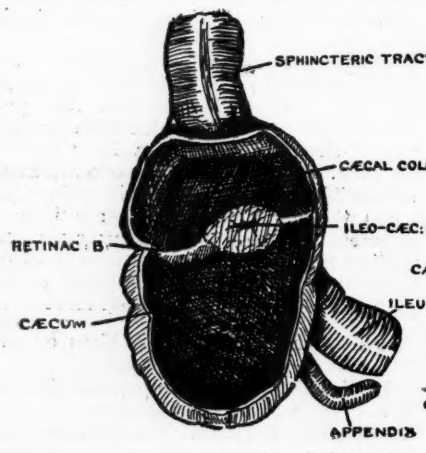

Fig. 1.—The human caecum laid open to show the ileo-caecal orifice, the retinacular bands, the caecal colon, and caeco-colic sphincteric tract. One-third natural size.

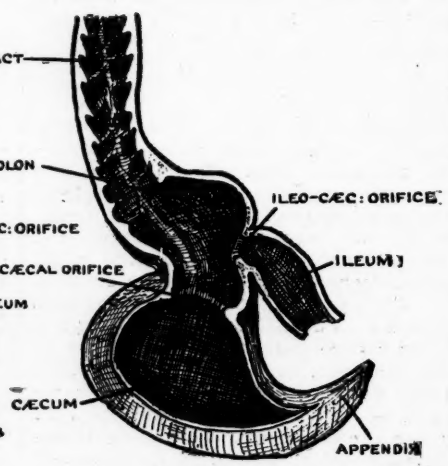

Fig. 2.—The caecum of the rat (twice natural size) laid open to show the same parts as are seen in Fig. 1.

Ileo-caecal Sphincter.

John Hunter, with his usual prescience, realized that a knowledge of the ileo-caecal valve would provide a clue to the nature of the caecum. In 1903, as a result of a series of observations on all classes of vertebrate animals, I came to the conclusion that there was always a functional muscular sphincter at the junction of the small intestine with the great.[8] It is present in the amphibian bowel, the reptilian, avian, and mammalian. When the great bowel undergoes retrogression, as it has done in bears and in their allies and in many forms of insectivora and edentates,[9] the ileo-caecal sphincter is the only visible structure which remains to mark the junction of the small intestine with the large. My observations led me to regard the ileo-caecal sphincter as a constant structure, its main function being to serve as a mechanism for regulating the passage of the contents of the ileum into the caecum, in much the same way as the pyloric sphincter regulates the passage of the food from the stomach into the duodenum.

Independently, Dr. T. R. Elliott[10] had observed the ileo-colic sphincter in action, and placed our knowledge of it on a much sounder basis. In May, 1904, he was able to announce that stimulation of the sympathetic nerves of the inferior mesenteric plexus causes it to contract, and at the same time the same stimulus brings about an inhibition of the neighbouring musculature of the ileum and colon; adrenalin, he found, had a similar effect. Dr. Barclay Smith and he[11] concluded that the strength of the sphincter was commensurate with the thickness of the muscular coat of the caecum and adjacent part of the colon, and that its purpose or function was to prevent the caecal contents being forced backwards into the ileum under the pressure caused by antiperistaltic movements. Sir William Macewen,[12] unaware of the observations made by Dr. Elliott or by myself, announced in the Huxley Lecture of 1904 that he had recognized the presence of an ileo-caecal sphincter and studied its action in a soldier who had a temporary window in the wall of his caecum. In this manner a most important step forwards was made in our knowledge of the caecum; we came to see that there is an elaborate neuro-muscular mechanism which regulates the passage of chyme into the caecum and prevents the regurgitation of the contents of the caecum into the ileum. The significance of the ileo-caecal orifice and sphincter is clear if we admit that they mark a point in the alimentary tract where one form of digestion ends and another begins.

Functional Divisions of the Caecum.

In my preliminary studies[8] of the ileo-caecal region of the bowel, I came to the conclusion that in the fully developed mammalian caecum, such as that of the rabbit or rat, there are three parts which appear to be demarcated for functional purposes (see Fig. 2). These three parts are:

1. The caecal colon, which lies above or beyond the ileo-caecal orifice; it is usually regarded as the commencement of the ascending colon, but a comparative study shows that it represents the primitive caecum of the lower vertebrates (Fig. 2).

2. The caecum proper, which lies below or proximal to the ileo-caecal orifice, and arises as a diverticulum from the caecal colon.

3. The apical or appendicular part, which is characterized by its narrow lumen and its thicker walls. Professor Berry[13] showed twelve years ago that it is lined by a mucous membrane laden with lymphoid tissue.

The same three divisions are to be recognized in the human ileo-caecal region—caecal colon, caecum and appendix (see Fig 1). In the rat's caecum there is a distinct sphincteric ring (caecal sphincter) at the junction of the caecum and caecal colon. In the human caecum this sphinteric ring (caecal sphincter) is permanently united with the ileo-caecal orifice, and forms the well-known retinacular bands (Fig. 1). The action of the caecal sphincter can be studied in the rat (see Fig. 3). At one minute (Fig. 3, A) the ileo-caecal orifice is closed and the caecal sphincter dilated; at another this sphincter is in action (Fig. 3, B), and the ileum opens directly into the caecum; other states are represented in Fig. 3, C, D. As yet we know nothing of the action of the retinacula of the human caecum, but from what we know of their action in other animals we may safely infer that during caecal digestion they can regulate the passage of the colic and iliac contents to and from the caecum.

CAECO-COLIC SPHINCTERIC TRACT.

In mammals which have the caecum well developed, the first part of the colon—corresponding to the commencement of the ascending colon in man—is differentiated from the caecum below and the rest of the colon above by the degree to which its circular musculature is contracted (see Figs. 1 and 2). I regard this part as serving as a

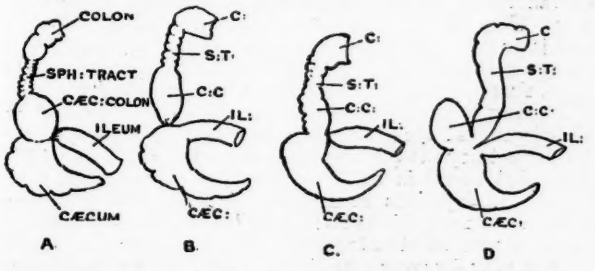

Fig. 3.—Figures illustrating four functional states of the ileo-caecal region of the bowel of rats. In A and C the ileo-caecal sphincter is closed; in B and D it is relaxed. In A and B the sphincteric tract is closed; in C and D it is open. Various conditions of the caeco-colic sphincter are shown in A, B, C, and D.

functional sphincter of the caecal colon. It is true that not one of the many experts who have watched the passage of a bismuth-laden diet have been able to verify the existence of this sphincteric tract. It must be remembered that it is hard to be certain of the movements in the ileo-caecal region; the bony pelvis prevents us from having a clear image, and the ascending colon always bends downwards in front of the caeco-colic junction, so that it is difficult to watch the passage of bismuth-laden chyme as it passes into the beginning of the colon. In the routine of abdominal operations the functional differentiation of the segments of the bowel is not observed owing to the paralytic effect of anaesthetics; in the routine of the *post-mortem* room the functional states are not seen because the putrefactive action of the caecal and colic contents soon destroys the vital action of the muscular coat of the great bowel. The three reasons which convince me I am right in differentiating a functional sphincteric tract are:

1. Its presence in all mammals with well-developed caeca. Comparative anatomists have failed to recognize it because in some animals, such as the horse, the caecal colon has become highly specialized and elongated, thus thrusting the sphincteric tract some distance away from the ileo-caecal orifice.

2. In young and healthy subjects, if formalin be injected by the arterial system, before putrefaction has destroyed the vitality of the musculature of the bowel, this tract will be seen (see Fig. 1 and also Professor Symington's drawing in *Quain's Anatomy*, vol. iii, Part IV, p. 190, 1896).

3. It is impossible to decompress gas from the caecum of the living; the caecum always contains gas; that is a necessary correlative of the process of digestion going on within it. The gas is locked up in the caecum just as it is in the cardiac part of the stomach; it cannot be pressed into the ileum because of the ileo-caecal sphincter; it cannot be pressed along the ascending colon because of the sphincteric nature of the muscular wall at the commencement of the ascending colon.

THE ILEO-COLIC REGION OF BIRDS.

The ileo-colic region reaches its highest specialization in graminivorous and vegetable feeding birds. A study of the avian mechanism helps us very materially to understand the working of the ileo-caecal tract in mammals. In Fig. 4 I have represented the termination of the ileum and beginning of the colon of a young ostrich. Between the ileum and colon there is a well-demarcated chamber corresponding to the caecal colon of mammals. It is separated from the ileum by a sphincter (ileo-colic), and from the colon by a caeco-colic sphincteric tract (Fig. 4). The two long caeca open from the caecal colon by a common orifice, which is guarded by a strong caecal sphincter. It is easy to see that the caecal colon is the feeder of the caeca; when it contracts, its contents, being shut off by the sphincters at its iliac and colic ends, are forced into the caeca or onwards into the colon.

It appears, however, that the caecal colon has also a selective function. In the valuable report[14] by the committee which recently inquired into grouse disease—Dr. Hammond Smith drew my attention to this source of information—a number of valuable observations are recorded. The rough fibres and débris of heather shoots and of moor fruit present in the chyme when it reaches the colic caecum are passed on to the colon through the sphincteric tract, while the more fluid matter is pressed into

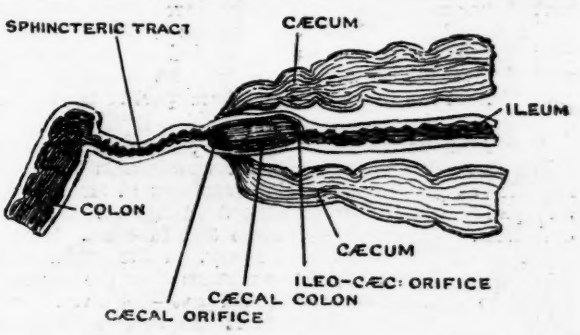

Fig. 4.—The ileo-caecal region of a young ostrich.

the caecum. Thus, the caeca, which together are twice the length of the small bowel in the grouse, are filled with fluid, alkaline chyme from the ileum; in the caeca its reaction becomes acid, probably from the bacterial digestive processes which take place in the caeca. The caeca are only partially and occasionally emptied, the caecal contents differing completely in character from the usual "droppings" of the grouse. Here, then, in its highest form we find the caecal colon acting as a selective mechanism and the caeca set aside as separate chambers for a special and apparently bacterial process of digestion and absorption.

EMPTYING OF THE CAECUM.

In rodents the caecum begins to pass into action as soon as food enters the stomach, but at no time does the caecum of any animal become completely emptied. It is well known that in animals which die of starvation the caecum and adjacent part of the ascending colon retain their normal contents, but the significance of this fact has not received the attention its importance merits. If the digestive processes undergone by food in the caecum and great bowel are due to bacterial action, then it is absolutely necessary that a caecal "batch" must be preserved to secure the continuation of bacterial digestion. Observations made by Elliott and Barclay Smith have an important bearing on the mechanism which secures the retention of the caecal batch. In carnivores, such as the cat, ferret, dog, stimulation of the sacral visceral nerves causes a constriction and emptying of the great gut from the caecum to the rectum. In vegetable-eating animals the effect extends to only the distal part of the colon; the proximal part of the colon—corresponding to the caecum, ascending colon, and the hepatic part of the transverse colon of man—are outside the influence of this emptying mechanism. Holzknecht and Dr. A. E.

Barclay[15] have observed the peculiar expulsory movements in the splenic part of the transverse colon. We know that expulsory movements occur in the colon at and distal to the splenic flexure. We must infer that the preservation of part of the caecal and colic contents is essential for the digestive economy of vegetable-feeding mammals, and if we admit that the digestive processes of the caecum and colon result from the action of certain bacteria we see why Nature has placed the proximal part of the colon outside the influence of the expulsory mechanism. In the proximal part of the colon antiperistaltic or retaining movements are observed, never the movements of complete expulsion. For the same reason we can explain the absence of the great bowel in all forms of fishes; the differentiation of the bowel into small and great intestine appears with the evolution of land-living, air-breathing vertebrates. A bacterial form of digestion, necessarily attended by the production of gas within the bowel, would upset the stability of gill-breathing, free-swimming forms. The digestive juices of fishes are notoriously strong. From the point of view of comparative anatomy, we must regard the great bowel as a part which has been elaborately modified and evolved, through the course of long ages, for a highly peculiar form of digestion.

Some years ago I noted the following facts relating to the digestive changes in the bowel of rats fed on oats. In the jejunum free starch was abundant; in the lower part of the ileum no starch reaction was obtained. It was not until the contents of the colon had reached the mid part of the transverse colon that the starch reaction became again manifest. These observations seem to indicate that cellulose digestion had proceeded in the proximal part of the colon, exposing fresh granules of starch which were absorbed in the middle and distal part of the colon.

The Alleged Vestigial Nature of the Appendix.

For many years the appendix vermiformis has been regarded as one of the vestigial structures of man's body, an opinion which has prejudiced us against any real endeavour to discover its nature and function. Twelve years ago Professor R. J. A. Berry, on the evidence he then produced, came to the conclusion that the appendix should be regarded as a specialized part—not a retrograde part—of the caecum, and that is the conclusion which every one must reach who makes an impartial survey of our knowledge of the comparative anatomy and of the evolution of the human ileo-caecal region. At least in three separate orders of mammals the apical part of the caecum has become specialized and demarcated from the rest of the caecum in the form of an appendix. It has never been suggested that the appendix of the koala, wombat, rabbit, lemur, or of the anthropoid apes is a vestigial structure. So like are the caeca and appendix of the gorilla and chimpanzee to the same structures in man, that I know of no character by which an expert could tell the one from the other. In the anthropoids, as in man, the caecum and appendix undergo the same peculiar changes in passing from infancy to adult age. We know from their fossil remains that the great anthropoids are of extreme geological antiquity; were their appendices injurious or vestigial structures, there has been ample time to accomplish its complete suppression. Kelly and Hurdon, in their well-known work,[16] cite the small calibre of the appendix as evidence of its retrograde character; it is more in keeping with what we know of animal structures to regard the smallness of calibre as an adaptation to a peculiar but unknown function. We do not suppose the oesophagus to be a retrograde organ because it is narrow as compared to the stomach; we fortunately know the function of the gullet.

Probable Cause of Derangement.

Every one who is acquainted with the more recent developments of our knowledge of the surgery and pathology of the abdomen agrees that, in a large proportion of civilized men and women, the great bowel—especially the caecum and appendix—is abnormally liable to derangement and to disease, but as to the cause of that condition there is a diversity of opinion. No observations of recent years throw more light on appendicitis than those which Dr. Weinberg[17] made on chimpanzees dying in captivity. We have seen that the caecum and appendix have the same form in the chimpanzee as in man. In ten out of sixty-one chimpanzees appendicitis was found at death. We have no reason to suppose that in its natural habitat this anthropoid is specially liable to appendicitis—the evidence is purely negative; but as soon as the chimpanzee comes into captivity, and is placed on a human diet and exposed to human contagion, it becomes subject to a prevalent human disease. In the chimpanzee's case we blame the diet. Metchnikoff and Dr. Barclay Smith, as far as man is concerned, regard the appendix as at fault. When we think of how the diet of highly civilized races has changed—in quality, quantity, and character—in comparatively recent times, one must marvel that our organization, which was evolved to deal with a more primitive and more precarious supply of food, has accommodated itself to modern conditions so well as it has. We know that beyond the neolithic period, when cereals began to be cultivated, some six thousand years ago, there lies a vast hinterland of rude human existence, when man must have lived on the natural products of the country. With the discovery of fire and of the artificial preparation of food (we know that man had discovered the use of fire before the end of the Pleistocene period) the task of the alimentary system must have been greatly altered. The greatest changes, however, are those of more recent centuries—the concentrated nature of food, its plentiful supply, its highly artificial character. When we come to realize how slowly evolutionary processes have affected man's body in past times, we can hardly expect our internal digestive system to adapt itself to the rapid pace demanded by the ever-accumulating resources of civilization. The modern changes we see at work in our teeth and jaws have set in since neolithic times; we have every reason to suppose these are allied to, and contemporaneous with, changes affecting the whole alimentary system.

Thus an impartial survey of the evidence at present at the disposal of the anatomists indicates very plainly that we cannot hope to prevent or cure the ailments to which the great bowel is liable so long as we regard it as a hopelessly injurious or useless structure. On the other hand, if we regard it as having all the anatomical appearances of a useful structure, our outlook becomes hopeful if we can only discover what its uses are. If we only knew how to keep it suitably and profitably employed by altering our diet to meet its requirements, it will, we have every reason to think, serve us and future generations just as well as it answered the digestive needs of primitive and successful races in the past.

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WITH the approval of King Edward's Hospital Fund for London and the Charity Commissioners, an amalgamation of the British Lying-in Hospital with the Home for Mothers and Babies, Woolwich, the President of which is H.R.H. Princess Christian, has been provisionally arranged under the title of the British Hospital for Mothers and Babies. The subtitle of the latter institution, "National Training School for District Midwives," will be retained, and the joint hospital will occupy a new building, which is shortly to be erected at Woolwich for the purpose. The authorities of the British Lying-in Hospital have been led to this step by the rebuilding and alteration in character of the district around Endell Street, which has greatly reduced the number of its patients, whilst the addition of maternity wards to most of the large hospitals has also influenced their decision. They feel that the usefulness of the institution will be materially increased if it follows the population to the outskirts of London.

Remarks
ON
RECENT PROGRESS IN CONNEXION WITH SYPHILIS.

DELIVERED AT A MEETING OF THE HAMPSTEAD DIVISION OF THE METROPOLITAN COUNTIES BRANCH.

BY D'ARCY POWER, F.R.C.S.ENG.,
SURGEON TO AND LECTURER ON SURGERY AT ST. BARTHOLOMEW'S HOSPITAL.

OUR knowledge of syphilis has made such strides during the last decade that we are almost justified in saying much of what we were taught as students was wrong. A quarter of a century ago our masters were only beginning to free themselves from the great error into which John Hunter had fallen when he wrote in the least illuminating of his scientific contributions:

> The matter of gonorrhoea will produce either a gonorrhoea, a chancre, or the lues venerea; and the matter of a chancre will produce either a gonorrhoea, a chancre, or the lues venerea.

This statement, coming with all the force of Hunter's great authority, rendered the whole question of venereal disease chaotic where formerly there had been some glimmering of light. To the great loss of science, Hunter paid for the mistake with his life, since there is little doubt that he died of syphilitic disease of the arterial system, a result of the experiment upon which he based his inaccurate conclusion. In accordance with his teaching, mercury was given for a time in every case of venereal disease without method and merely for the relief of symptoms. It soon came to be recognized that gonorrhoea, at least, was a separate disease from syphilis, but it was not until bacteriology was well established that syphilis and soft sores were clearly distinguished from each other, and the oft-debated question of a single or dual poison was finally settled. It then became known that the gonococcus caused gonorrhoea, that Ducrey's bacillus, amongst other organisms, caused soft sores, and that syphilis was the result of some other poison. This poison still remained unknown, and was called "a virus," though curiously enough the disease itself was called by the euphemism of "specific." Most thoughtful persons had arrived at the conclusion that it was infective, and looked forward to the time when the actual organism should be discovered. Other points, too, had emerged from the darkness—that the three diseases were not mutually incompatible, that they had different incubation periods, and that they might exist in any combination in the same patient.

When we were students, only the more salient features in connexion with syphilis were recognized, and vast fields of the disease remained to be explored. Nothing was known—or at any rate was taught us—about its effects on the internal organs. Visceral syphilis was hardly recognized, and cerebral syphilis was denied. The conditions which are now grouped under the heading of parasyphilis were not even suspected; indeed, parasyphilis is so recent a term that it has hardly yet come into general use. It is a convenient expression for those conditions produced by long-standing syphilitic inflammations the consequence of, but not actually caused by, the direct action of the spirochaete itself.

Clinically I think that we were taught about syphilis as well when I was a student as we teach our dressers at present, but scientifically our masters had as much to learn about the disease as their pupils.

HISTORY OF TREATMENT BY MERCURY.

The first real advance was made when it became known that there was as much or even greater danger in a mild attack of syphilis than in one which was marked by more severe signs and symptoms, because the milder attack was apt to be imperfectly treated whilst the more severe one naturally led to more adequate treatment. The second great advance was made when it was recognized that mercury would cure syphilis, and that it was necessary therefore to give it systematically and not for the short periods when the signs of the disease were manifest. Both these advances in knowledge were perhaps beyond the reach of our masters. The first certainly was. Histology had first to show the existence of visceral syphilis where such a condition had been doubted or categorically denied. Pathological histology in its more difficult aspects, especially in connexion with the nervous system, is a thing of our own time, and has been brought to fruition by the work of our own colleagues and pupils. The training of a first-rate histologist was in some respects superior to that of a first-rate morbid anatomist of the type of Hunter, Baillie, or Paget. It led to the observation and correlation of more minute differences. The later school, therefore, when attention was turned to the problems of medicine, often produced splendid clinical physicians by whose labours the relationship of the parasyphilitic lesions to syphilis has been mainly proved. Clinical observation and pathological histology had reached their limits in syphilis just about the time that experimental medicine and bacteriology gave a new start to the study of the disease, and during the last ten years our knowledge of syphilis has been revolutionized by the focussing of these four lights of medicine upon it.

Clinical medicine had already shown that mercury was the most reliable and potent drug for the cure of syphilis. It had, indeed, been employed as a remedy for syphilis ever since the introduction of the disease into Europe at the end of the fifteenth century, but it had fallen somewhat into disrepute, owing to the reckless manner in which it was given. It was too often replaced by potassium iodide, guaiacum, arsenic, and other drugs which are now recognized as valuable adjuvants in the treatment, although they are wholly ineffective in the cure of syphilis. As a result of the abuse of mercury it was detested by the laity, for it was believed that every patient was salivated, and that it was never eliminated by those who took it. It was an everyday remark in the out-patient room when I was a student that "I won't take mercury," or "Please don't give me mercury." This fear seems wholly to have vanished, and the present generation has lost its inherited dread of the drug. Many medical men are still practising who hold that syphilis is not cured by mercury "unless the gums are touched," but such an assumption is wholly unwarranted. It shows that the remedy has been given with insufficient precautions, and on a system governed rather by routine than by that study of the individual case which should alone be followed in the treatment of every disease. Mercury was originally given by the mouth or by inunction, and wholly for the relief of symptoms. Blue pill in the earlier times and grey powder at a later period were the standard preparations. For those who could afford the expense and the time a visit to Aix for one, two, or three seasons of six weeks each enabled the inunction method to be employed with a minimum of inconvenience. Attempts were made from time to time to administer mercury by other channels than by the mouth and skin, but they were not extensively adopted until intramuscular injections had been made comparatively painless, and surgery had advanced sufficiently to ensure that their administration should be aseptic.

Professor Fournier in Paris, Professor Lang in Vienna, and Sir Jonathan Hutchinson in England must have the credit of administering mercury to cure syphilis, and not to cure the signs of syphilis. The success of their method of treating the disease by small doses of mercury, continued for long periods of time, is well seen in the general condition of the population in our large towns. Syphilis formerly left ineradicable traces upon multitudes of people. It is as rare now to see the signs which were formerly so familiar as it is to see a face badly marked with small-pox. Even in congenital syphilis it is constantly necessary to warn students not to place too much reliance upon the facial aspect or upon the absence of Hutchinson's triad—teeth, eyes, and ears—as an indication that syphilis is absent when other indications point to it as a factor in any given case. The advance of knowledge has fortunately given us more trustworthy tests than the clinical ones upon which reliance had formerly to be placed.

We cannot, however, take the whole credit to ourselves for this improvement. Mercury is, indeed, given earlier and more systematically than it used to be, and the patients are neither salivated nor insufficiently treated, as happened when they were only treated for the signs of

syphilis. But the general standard of health and hygiene has improved markedly during the last quarter of a century. Drunkenness is less common, and the resisting power of the individual therefore is greater. We must consequently refuse the whole credit for the improvement and give a share of it to the community at large. It is clear, at any rate, that the disease is not becoming more frequent, and it is equally clear that the outward stigmata of syphilis are not diminishing because as a nation we are becoming immune to the disease owing to a general syphilization.

SCHAUDINN'S DISCOVERY.

The advances I have mentioned hitherto all date antecedently to the year 1905—a year which must be for ever memorable in the annals of syphilis, because Schaudinn discovered the *Spirochaeta pallida*, and thus allowed of the possibility of a rational line of treatment. Schaudinn's discovery was not accidental. It was the end of a long series of researches undertaken to determine the cause of syphilis. The advance of bacteriology and the discovery of micro-organisms which produce the diseases now called infective—for example, tubercle, osteomyelitis, septicaemia, and others—led every scientific surgeon to the belief that syphilis belonged to the same group, although it presented certain peculiarities which did not bring it quite into line with the rest. Many observers brought forward many organisms, each of which was confidently affirmed to be the syphilis germ. Each in turn failed to prove his claim, and even as late as 1908 the more cautious pathologists preferred to speak of the virus of syphilis rather than of its micro-organism which had already been discovered for three years.

At last the German Academy of Science, at the instigation of Franz Schulze, the Professor of Zoology in Berlin, determined to devote serious attention to the subject. A commission of experts was appointed. Fritz Schaudinn, a young protozoologist who had already made his name in connexion with spirillar infection in birds and in the relapsing fever of man, was entrusted with the actual work of investigation. Erich Hoffmann, a recognized authority on syphilis, was associated with Schaudinn in the research that he might act from the clinical side. By good luck the very first case examined showed a number of motile spirilla which were at once obvious to the trained eye of Schaudinn. The patient was seen on March 3rd, 1905. She was found to have a primary chancre on the left labium majus, with several slightly ulcerated papules on the vulva. Subsequent examination of other cases of syphilis showed the existence of similar spirilla in varying numbers, both in the primary and secondary stages. Schaudinn's familiarity with protozoa soon enabled him to group these organisms into two classes—the *Spirochaeta refringens*, the larger organisms with few spirals and deeply staining, and the *Spirochaeta pallida*, smaller, more slender, with numerous spirals and staining with difficulty. He further determined that the *Spirochaeta refringens* is found in non-syphilitic affections as well as in some ulcerated syphilitic lesions, and that *Spirochaeta pallida* is found only in syphilis.

The discovery aroused great interest and much controversy, and I well remember the pride with which Metchnikoff demonstrated the spirochaete to us at the Institut Pasteur in Paris on May 13th, 1905. Schaudinn's contention that the *Spirochaeta pallida* was the cause of syphilis was further strengthened by the discovery of the organism in the liver and spleen of an infant with congenital syphilis, and it is now generally admitted that syphilis is a chronic spirillosis. The disease, therefore, has established its claim to be considered infective, and its peculiarities are explained by the fact that the infecting agent is a protozoon and not a protophyte like the bacteria and micrococci causing the other diseases in allied groups. Schaudinn, having completed his life's work, died at Hamburg of an obscure pelvic suppuration on June 22nd, 1906, at the age of 34. A man of modest and retiring disposition, whose friendship it was a pleasure to have, and who could well have been spared to make further advances in the science of protozoology, which he had already made his own.

Metchnikoff, in the meantime, had been doing equally good work in Paris on the etiology of syphilis. He showed that the disease was inoculable not only upon the higher primates, but also upon monkeys, and his experiments proved that syphilis was not a purely human disease, as was generally stated, and that the infection was in the earliest stages as purely local as tetanus or hydrophobia. He showed that it took an appreciable time for the infection of syphilis to become generalized, and he was so sure of the truth of this important fact that he allowed one of his pupils to be inoculated from two patients who had syphilis, to wait an hour after the inoculation, and then to have the virus destroyed by the inunction of a mercurial ointment which was rubbed in for five minutes. A monkey inoculated at the same time and from the same cases developed a chancre. It was not treated by inunction of the mercurial ointment. The inoculations were performed on February 1st, 1906.

THE WASSERMANN REACTION.

Various observers had worked from time to time at the serum reaction of syphilis, hoping to obtain by this means a test for the disease. In 1906, Wassermann, Neisser, and Bruck drew attention to the syphilitic reaction which is now commonly known as Wassermann's test. It is based upon the reaction, first published in 1901 by Bordet-Gengou, that haemolysis is prevented when the complement has first been incubated in the presence of cholera vibrios together with cholera immune serum. What was true of cholera proved to be true of typhoid, and hence came Widal's test. What was true of enteric was also shown to be true for syphilis, and thus Wassermann's test came into use. The reaction was developed by experiments upon apes, and as it proved to be reliable in their case it was soon employed for the recognition of syphilis clinically.

The general outcome of the work of Wassermann, Neisser, and Bruck has been to show that a positive reaction is given by syphilitic patients from five to eight weeks after infection—that is to say, from the tenth to the thirtieth day after the appearance of the primary sore, although the reaction has occasionally been positive as early as the eighth day. The reaction is not the earliest sign of the disease, therefore, nor is it the first proof that the syphilis has become generalized, because excision of the sore as soon as the test has become positive has still been followed by syphilitic manifestations in the ordinary way. The blood is usually employed for Wassermann's test, but the cerebro-spinal fluid has also been used with great success, more especially in cases of parasyphilis. Major Harrison states that in 489 cases where the test was applied it was positive in 71.8 per cent. of cases of primary syphilis, in 90 per cent of cases of secondary syphilis, and in 83.5 per cent. of tertiary syphilis. It was only positive in 50 per cent. of patients who were tested during the latent periods—that is to say, when there were no active syphilitic manifestations; but it was positive in 80–90 per cent. of cases of general paralysis of the insane, and in 50–75 per cent. of cases of tabes.

Major Harrison is justified in stating:

> The value of the Wassermann test lies in the fact that it enables a diagnosis of syphilis to be made in many cases from the fifteenth day after the appearance of the sore, and from three weeks to a month earlier than any assistance could be derived from clinical methods. Its value in this respect may not be as great during the secondary stage, because the clinical signs are then sufficiently clear, but in stages later than the secondary, where the malady frequently manifests itself in a manner which does not display the true character of the underlying disease, the test must be of the greatest assistance in affording evidence that the patient is, at any rate, suffering from syphilis in a more or less active form. Wassermann's reaction is also said to occur in sleeping sickness, which is also a trypanosomiasis, and in some cases of malaria, but for all practical purposes a patient in England who gives a positive Wassermann reaction is infected with *Spirochaeta pallida*, and is therefore syphilitic. (*A System of Syphilis*, vol. vi, p. 175.)

A negative Wassermann reaction does not necessarily exclude syphilis, but if it is repeatedly negative when the patient is not taking mercury, he is probably not syphilitic, for no spirochaete infection exists. The reaction is by no means ideal, and will probably prove capable of improvement. At present it is useful for a variety of purposes, and it is clearly an advance towards accurate scientific knowledge. It has shown already that the earlier a course of mercurial treatment is begun in acquired syphilis the sooner does the reaction become negative. It has thus set aside, once and for all, the teaching that mercurial treatment should not be commenced until the appearance of "secondary" symptoms. The test can also be applied to

measure the utility of other forms of antisyphilitic treatment, and it has met with marked success in gauging the value of the various organic compounds of arsenic. A time limit has hitherto been employed in the treatment of syphilis, the limit being quite arbitrary and varying with each surgeon's experience and preconceived ideas. It seems probable that by using the Wassermann test we shall be able to say when the spirochaete infection has been destroyed and, consequently, when mercury and arsenic may be safely discontinued. And if we can say when syphilis is cured we shall also be able to answer the many important subordinate questions which hang upon the main issue. The test also serves to differentiate those difficult cases of aneurysm, phthisis, white swelling of joints, and tumours of the testicle, by showing which are and which are not due to spirochaete infection. It is said, too—but of this I have no experience—that in infants it will distinguish between hereditary syphilis and syphilis which has been acquired during or shortly after birth. I confess that it took me some time to appreciate the value of Wassermann's test, and that at first I was inclined to undervalue it, but a better acquaintance with its help in difficult and doubtful cases has led me to think very highly of it.

The Principles of Mercurial Treatment.

The cause of syphilis being known and a test having been obtained, it has at last become possible to employ a rational treatment. Before 1905 it was indeed recognized that the disease could no longer be treated in a routine manner, but that each patient must be considered individually. It was recognized, too, perhaps on the analogy of influenza, that syphilis always picked out the weakest tissues in the body, or perhaps it would be more correct to say the tissues which had been subjected to the greatest physiological strain. In one person, therefore, the bones suffer most, in another the skin, in another the mucous membrane, in another the heart and arteries, and in yet another the central nervous system. Many tissues may be affected in a minor degree, but the brunt of the disease is generally borne by one or more structures.

Little by little, too, it had been learnt that syphilis was curable when treatment was persisted in for long periods of time, and that so long as mercury was given the particular preparation was of less importance than the duration of its administration. The adjuvant drugs, upon which too high a value had been placed when mercury was dreaded on account of the reckless manner in which it had been given, were gradually relegated to their proper position. Potassium iodide, guaiacum, sarsaparilla, arsenic, and the whole group of "blood purifiers" were made to give way to mercury by those who had the interest of their patients at heart and were not blinded by prejudice. Formerly, as I have said, our masters taught by precept and practice that it was enough to treat a patient when and so long as he had manifest signs of syphilis. Even at Aix active treatment alternated with long periods of intermission. For some years before 1905 the prognosis of syphilis had become more settled, and in place of a cheery optimism that the disease would work itself out, or the black pessimism that "once syphilitic always syphilitic," a patient would be told that a well regulated and prolonged course of mercury afforded him a fair chance of complete recovery without any of the disastrous results associated with salivation. Precautions were taken to put the patient into the best state of health to meet such a course, and the more especial sources of danger were foreseen and, as far as possible, guarded against. The mouth and teeth were put into the most favourable hygienic condition; the state of the alimentary canal was regulated, and it was understood broadly that whatever might be the cause of syphilis its virus acted most powerfully in the presence of pyogenic micro-organisms, and upon parts where there was a continuously increased blood supply.

Mercury was given in every case of venereal ulcer so long as the cause was unknown, and so long as a single poison was thought to be capable of producing either syphilis or soft sores. No question of diagnosis arose until it was recognized that there were two poisons, the one requiring mercury, the other curable without it. The typical hard sore of syphilis and the multiple soft sores were not difficult to distinguish, but as the general health of the population improved, drink became less fashionable, and cleanliness was held in higher esteem, the hard sore began to lose the characters assigned to it classically, and the differential diagnosis between it and a chancroid became less easy. The "parchment sore" was described, and later the non-indurated syphilitic sore. The dread of mercury persisted, and for fear of giving it unnecessarily the patient was left untreated until he showed unmistakable signs of syphilis. Perhaps the last thing learnt was that the poison of soft sores and the virus of syphilis were not mutually antagonistic, and that it was quite usual for a patient to become infected at the same time with chancroids and syphilis. Careful treatment would cure the soft sores before the incubation period of syphilus had expired, and the more serious disease might thus manifest itself when a favourable prognosis had already been given. From this danger we are saved by the timely use of Wassermann's test.

Blue pill, blue ointment, and grey powder served for many years as the vehicles by which mercury was introduced into the body of a patient with syphilis, but the advance of chemistry and improvements in pharmacy, with the gradual abolition of routine treatment, have led to the production of a great variety of mercurial preparations and a more varied method of administration. A great step in advance was made when the broad principle was established that mercury was the only cure for syphilis, and that it did not matter very much how it was given. Practitioners still exist who pin their faith on a single form of the drug and on one method of administration. It is abundantly clear that any method and any preparation is equally efficacious if it introduces sufficient mercury into the system and for a sufficient length of time to destroy the spirochaetes and the products of their action. We do not yet know and we have still to learn by scientific means how much mercury must be given and how long a time it requires completely to destroy the infection. Personally, I think that small doses for long periods of time are no less effectual than larger doses for the same period, and the small doses are certainly less dangerous. The time has almost arrived when we shall cease to guess, because the accumulated experience of many Wassermann tests will enable us to give a certain answer.

There is no need to employ one preparation of mercury exclusively even for the same individual. Grey powder, perchloride of mercury, and the iodides of mercury are interchangeable with good results. Neither is the administration method of the first importance. Inunction, pills, draughts, and powders held undisputed sway for many years. It is only within our own memory that these means have been displaced to any great extent. When mercury was given for a short time to cure symptoms a course was no great hardship, but as soon as it was given for prolonged periods to cure the disease a mercurial course became so irksome and distasteful to the majority of patients who had acquired syphilis that they shirked it when it was compulsory, or abandoned it altogether when it was entered upon voluntarily. It was often difficult in a long course to prevent gastric disturbance, whilst inunction could rarely be carried out satisfactorily in this country. Other methods were sought, and foremost amongst them was the use of intramuscular injections. Adopted on a large scale and with excellent results in the navy and in the army, intramuscular injections mark the division between the old and the new school in the treatment of syphilis. The old school believed in the efficacy of large doses of some particular preparation of mercury given for short periods; the new school thinks that smaller doses continued for many months are more certainly curative. It remains for modern research to show which is the better method. Intramuscular injections were run a little too hard at first. They were soon found to be unsuitable for every case, and their careless or injudicious use was sometimes followed by untoward results which detracted still further from their undoubted merit. The method is now finding its proper place as a valuable alternative to inunction and oral therapy in the treatment of syphilis. Its employment has emphasized the rule that duration and regularity of treatment are of more importance in the cure of syphilis than the quantity of mercury given or the exact method by which it is administered.

Treatment by Arsenic Compounds.

Knowledge had proceeded thus far in 1905 when the discovery of the spirochaete enabled syphilis to be classified

as a form of infective disease, other groups of which were well known. Hitherto it had been considered a disease apart, now it fell into its proper place in the scheme of classification of disease. Dr. H. Wolferstan Thomas, of the Liverpool School of Tropical Medicine, published the results of his treatment of trypanosomiasis with atoxyl, an aniline compound of arsenic. The paper appeared in the British Medical Journal of May 27th, 1905 (vol. i, p. 1140). The results were so satisfactory that by parity of reasoning atoxyl was soon used in the treatment of syphilis, at first for the disease produced experimentally in animals and afterwards in human syphilis. The drug relieved the symptoms, but was found to be so uncertain and dangerous in its action that its use was abandoned. It more than justified its existence, however, because Ehrlich, with the help of Hata and Wertheim, started, from it as a basis, upon an elaborate experimental research into the action of the organic compounds of arsenic as destructive agents for pathogenic parasitic protozoa. Experimenting at first with the pentavalent arsenic molecule contained in atoxyl they were soon led to the conclusion that the trivalent molecule was a more potent germicide, whilst it had a less poisonous action upon the tissues of the host. Various organic compounds of arsenic were successively produced and were put to the test of experiment. Many were clearly unsuitable, and as Ehrlich's work was purely scientific he did not trouble to give names to the various products, but contented himself with numbering them. The task is not yet ended, but occasional halts have been made when some serviceable body was obtained. No. 418, or arseno-phenylglycin, appeared for a time to answer the expectation of the master who started in quest of a substance which should destroy all the pathogenic protozoa with the least possible injury to the infected tissues. Further work showed that No. 592 or di-oxy-diamido-arsenobenzol was more useful, and in 1909 the hydrochloride of this body was prepared as No. 606, and sold as a commercial product under the name of "salvarsan." The remedy proved very serviceable, but it required a little additional preparation before it could be injected, and it had to be given carefully. It was not, therefore, ideal, and the quest continued. Early in the present year "914" came into use under the name of "neo-salvarsan." It has the advantage of being soluble in cold water, of not requiring any special preparation before it is injected, and of being at least as efficacious as salvarsan. The dose of salvarsan was 0.6 gram, and of neo-salvarsan 0.9 gram; but salvarsan was best administered in a pint of sterilized salt solution at a temperature of 105° F., whilst neo-salvarsan only needs to be dissolved in 6 oz. of freshly distilled water at a temperature of 60° to 70° F. Both salvarsan and neo-salvarsan should only be dissolved immediately before they are used, as prolonged solution seems to alter their chemical properties. Both preparations are as interesting scientifically as they promise to be valuable curatively. They are of scientific interest because it is the first time that pharmacology has embarked deliberately upon the preparation of a highly complex body designed to destroy infective micro-organisms. The problem to be solved was wholly different from that which has provided the vaccines and serums with which we are familiar. These aim at teaching the tissues to fight their own battles. Ehrlich and his fellow workers design to poison the infecting organisms without injuring the tissues of the host, and without necessarily calling upon those tissues to take any share in the process. It is pioneer work, therefore, of the highest order, not dealing with any individual disease, but with the cause which produces a whole group of diseases, each one of which may differ widely in its symptoms and effects. Syphilis, fortunately, is amongst the group of spirillar diseases which has been first attacked, and the work has been crowned with remarkable success. Not absolute, of course, because reactions which answer admirably in the laboratory are by no means uniformly successful at the bedside, where the conditions are much more complex and are less capable of control. The results already attained bear out the contention that the spirochaetes are actually destroyed by the intravenous injection of these organic preparations of arsenic. There is not only a marked and rapid improvement in the signs of syphilis after their use, but there is also evidence that a spirochaete infection which has been in abeyance can be roused by them into sufficient activity to cause the Wassermann reaction to become positive where before their injection it had been negative. Salvarsan and neo-salvarsan, therefore, may be used as tests for the presence or absence of spirochaetes, and it will be possible by their means to say whether or not a patient is cured of syphilis. We are not yet able to state, however, the exact destructive action of these remedies, nor how far their effects are lasting. It was hoped on their first introduction that a single injection would be sufficient to destroy all the spirochaetes. Such a result seemed unlikely, and the hope has not been borne out after a more extended experience. The general conclusion arrived at is that the earlier salvarsan or neo-salvarsan is given after infection the greater and more lasting is its therapeutic value, but in all cases the injections must be repeated at comparatively short intervals.

My house-surgeons at St. Bartholomew's Hospital have made great use of salvarsan and more recently of neo-salvarsan. Their results have been very satisfactory in causing the speedy disappearance of signs and in giving relief to the symptoms of syphilis. They find that a primary sore disappears more rapidly after an intravenous injection of salvarsan or of neo-salvarsan than when mercury is given; that gummatous ulcerations repair rapidly; that ulcerations of the tongue with leucoplakia, which are in the condition known as precancerous, clear up wholly if cancer is not actually present, but only to a modified extent if the deeper tissues have already become involved in an epitheliomatous growth. They have found, too, that the pain of periostitis and of osteitis in patients who have acquired or congenital syphilis is markedly improved. The results have not been so satisfactory, indeed they are negligible, as might have been expected, in cases of extensive syphilitic necrosis of bone where the pathological condition is due rather to the action of pyogenic organisms than to the *Spirochaeta pallida*. Neither have good results been obtained in cases of symmetrical synovitis of the knees, which we are accustomed to speak of as "Clutton's joints," possibly because there is a tuberculous as well as a syphilitic infection in the children who suffer from them.

Good as these results are, I do not think that the time has come or that it will come for several years when we should pin our faith entirely to these arsenic compounds as a cure for syphilis. They may and ought to be given in the treatment of syphilis with a view to shorten the course of the disease, but mercury should also be administered by some of the ordinary methods and for the usual length of time, lest in the end we find that we have trusted too implicitly to an incomplete scientific experiment. It is only three years since salvarsan was introduced. It has already been improved upon, and the technique of its administration has been simplified. The progress and the results are most satisfactory, but as the administration of these arsenic compounds is not incompatible with the use of mercury, every patient with syphilis should be protected from all risk of failure by the employment of both remedies. The final results to be obtained from arsenic are still unknown; we are well acquainted with the effects of mercury, and its limitations are known.

What has been said this evening will show that the knowledge and treatment of syphilis has been systematized and improved in a remarkable manner in our own lifetime. But if much has been done much still remains to be done. The discovery that a spirochaete is the cause of syphilis gives an individual and human interest to the peculiarities and behaviour of protozoa when they have learnt to become parasitic. A large amount of research has been devoted to the life-history of the protophytes, but much less attention has been given to the protozoa about which nearly everything has still to be learnt. It is certain that the tissues of the body are able to destroy them in many cases, even when they appear to have gained a secure lodgement, for the spontaneous cure of syphilis is of no infrequent occurrence. It is equally certain that they have a remarkable power of remaining latent for indefinite periods. In their normal life-history they show this proclivity, because in patients suffering from syphilis periods of seemingly perfect health are interspersed with recurrent periods in which signs of the disease are manifest. During these periods of inaction the spirochaetes may be roused by the administration of

salvarsan in many cases and by mercury less frequently, and there are few practitioners who have not seen the signs of syphilis become worse or more generalized whilst the patient was upon a mercurial course. Hardships, deviations from good health and other debilitating influences will often provoke syphilitic symptoms which might otherwise have remained in abeyance. It will be interesting to learn, as we probably shall do in the future, how and why these intermissions occur. There is already some evidence to show that the infective protozoa pass a part of their life-cycle in a resting stage, during which they are undiscoverable by any microscopical examination known to us at present. It is assumed that they become intracellular during this period, but more must be learnt about them before any definite statement is possible, and the resting stage may prove to be only one of many interesting peculiarities serving to distinguish protozoal infection from that of the vegetable microbes.

Lastly, the important question arises: What should be the treatment for a case of syphilis as it is seen in general practice? The broad answer is: Make sure of your diagnosis, and make sure of it as early as possible. This can be done soon after the initial lesion has appeared by finding spirochaetes in the chancre either by means of the ultramicroscope or by the Indian ink method. The diagnosis being thus made, it can be confirmed in a short time by employing Wassermann's test. It is not desirable to await this confirmation, because the earlier the organic arsenic compounds are given, the better are the results obtained from them. Neo-salvarsan should be given by intravenous injection, and it should be followed at once by a systematic course of mercury. The neo-salvarsan should be given on the clear understanding that a single injection will not be sufficient except in very exceptional cases, and it should not be postponed because the patient thinks it will do just as well later. The experience already gained shows that the later it is given in the course of the disease the less marked are its effects, and the more frequently must the injection be repeated. On the other hand, there is still too great a tendency to rely exclusively upon the organic compounds of arsenic, and it is necessary therefore to repeat that for the present neo-salvarsan must always be associated with a regular course of mercury controlled by repeated Wassermann tests. These tests should be made during the intervals when mercury is not being taken, for the presence of mercury may render the test negative, although the spirochaete infection still persists.

Potassium iodide should be reserved for the later stages of syphilis, and it should be given in short courses of 10 or 15 grains three times a day. I do not believe it is useful in the earlier stages, as there is no evidence that it destroys the spirochaetes, and it is wasteful to order it in 5 grain doses to be continued indefinitely, as is too often done, because the tissues quickly become habituated to its presence, and excrete it as rapidly as it is ingested. In the light of our present knowledge, a patient is cured of syphilis when he has been through a prolonged course of mercury, and repeated tests have shown that the Wassermann reaction is negative even when neo-salvarsan has been employed as a provocative, and if he has remained free from signs and symptoms for a year after cessation of all treatment.

A SEQUEL TO NOVOCAIN INJECTION.

BY

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AND

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THE following case is of interest, as in the past five years novocain has come so much more into general use that it is important for those who are administering it frequently to have brought to their notice any case of true or alleged poisoning.

E. P., an unmarried girl aged 20, in domestic service, at 5 p.m. on November 6th was injected with 40 minims of a 2 per cent. solution of novocain to have three upper incisors extracted. The operation was successfully performed, the patient stating afterwards that she felt perfectly well. She went home to supper with her parents, returning later to her mistress's house, where she carried out her usual duties, and went to bed apparently in good health at 10 p.m.—that is, five hours after the administration of the novocain.

The following morning her mistress called her as usual; she was unable to get a reply and allowed her to sleep on. The maid remained unconscious for the next twenty-four hours, and her mistress, becoming alarmed, sent for a doctor, who pronounced her to be suffering from cocaine poisoning. The girl's parents were then communicated with, and at their desire one of us (S. G.) saw her at 11 a.m. on November 8th, about forty-two hours after the extraction of the teeth.

The patient was a well-developed muscular girl who rather presented the appearance of a case of cerebral irritation. Her face was slightly flushed, but respiration, pulse, and temperature were normal. She resented any interference. The jaw was tightly clenched; she refused to attempt to swallow or to take heed of what was said to her. She kept her eyes firmly closed; on opening them the pupils were equal and dilated; they reacted to light. The deep and superficial reflexes were normal. She had passed neither urine nor motion under her. The bladder was found to be nearly empty, although according to the history she had been in an unconscious condition about thirty-eight hours. What urine there was was normal in consistence. The catamenia had just commenced.

As every effort to rouse her was useless, she was ordered 2 minims of croton oil, to be given in butter. By 6 p.m. she had considerably improved; though still drowsy she would answer questions. The bowels had acted as the result of the croton oil, and for that purpose she had been able to get out of bed. She had taken milk. Her jaw was no longer clenched, and she was now awake. Two hours later she went to sleep and slept until the morning, when again it was found to be impossible to rouse her, and at 11 a.m. on November 9th her condition was exactly the same as on the previous day. The croton oil was repeated, with the same effect; but when the patient got out for the bowels to act she was not allowed to go back to bed, but was assisted to dress, and at 6 p.m. she opened the door perfectly recovered, and has remained well since.

Novocain is believed to be four to six times less toxic than cocaine, so that ¾ grain, the dose administered, was not excessive. Liebl injected himself with 0.4 gram in 10 per cent. solution without producing any toxic symptoms; 0.75 gram, more than eight and a half times the dose given to this girl, caused temporary inconvenience for one and a half hours. Frequently 1½ grains is safely given by lumbar puncture.

There were no symptoms of poisoning when the girl went to bed five hours after the operation, and when first seen by one of us (S. G.) it was stated that she had been unconscious thirty-eight hours and yet there was no distension of the bladder and her clothes were unsoiled; as soon, however, as the croton oil acted she was obliged to wake up because she was under observation; probably, therefore, she had seized her opportunity to urinate secretly.

The curious relapse and ultimate instantaneous and complete recovery combined with the other points in the case, all point to it being a case of feigned coma in a hysterical subject rather than one of toxaemia due to a narcotic poison.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RUPTURE OF A DERMOID CYST DURING PARTURITION.

I VENTURE to place on record the notes of the following case, as it presents unusual features.

At 2 a.m. on October 2nd I was called to Mrs. K., aged 35, who was in labour. This was her second pregnancy, the first child being 5 years old. The pains had started nine hours previously, but were said to have been weak and infrequent, and the waters had broken when the pains started.

The presentation was occipito-anterior vertex, the head just engaged in the brim, and the os was about the size of a half-crown; the pains were very weak and infrequent, occurring about every ten minutes. The woman's condition was excellent, she was not at all distressed, her pulse-rate was only 84, and I left her, returning about 10 a.m.

Her condition was then about the same, the pains still infrequent and weak; very little progress had been made; at 1 p.m. very little difference could be noted. At 5 p.m. the pains had increased in strength and were more frequent, so the patient was put under chloroform and forceps put on. After the first pull (which made little alteration) the forceps

were readjusted and delivery easily effected. Very little haemorrhage ensued, the placenta was easily expressed half an hour later, and the patient was left quite comfortable, with a firmly contracted uterus and a pulse of 90.

On seeing her at 11 a.m. next morning (October 3rd) I found that she had been vomiting continuously all night, and had been unable to retain even plain water; she had passed urine, but a soap and water enema had had practically no result. Her pulse was 100 but fairly full, and respirations 30. The abdomen was tympanitic, generally tender to light touch, distinctly distended, and showing some rigidity of both recti muscles at their lower ends.

The vomiting continued, and I asked my partner to see her, when we both agreed that surgical interference was distinctly indicated. She was removed to the Victoria Hospital, when Dr. Silva Jones, assisted by Drs. Hinks and Maxwell, opened the abdomen and found a ruptured dermoid cyst about 3 in. in diameter growing from the right broad ligament and hanging low down in the pelvis. Apparently this had been ruptured by the first pull of the forceps, and allowed the easy passage of the child's head at the second application.

A point of interest in the case was the violently irritating effect of the dermoid fluid contents on the peritoneum, as shown by the immediate onset of the vomiting, which became faecal eighteen hours after the cyst was ruptured, and the paralytic distension of the intestine.

The woman is making a good recovery, the only point of difficulty being to make the husband understand how a ball containing teeth and hair came to be inside his wife's abdomen.

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Southend-on-Sea. M.R.C.S., L.R.C.P.

A CASE OF SCARLATINA DURING THE PUERPERIUM.

I WAS very interested to read Sir John Byers's paper on "Rashes occurring during the Puerperium" in the JOURNAL of October 26th, 1912. It so happened that I had at that moment a case of scarlatina which occurred on the second day of the puerperium.

I was called in to Mrs. M., multipara, who was in labour, on October 2nd. I arrived simultaneously with the district nurse, and found that the child and afterbirth were both delivered. The whole labour lasted about an hour. There was a small epidemic of scarlatina prevailing in the village at the time, so I had taken all precautions against introducing infection into the house, and I was glad I had not been called upon to make an examination or assist delivery.

On the evening of the second day the patient was somewhat flushed, had a temperature of 98.8° F., and complained of sore throat. I gave her a dose of oil and pil. ergotin, gr. iii, t.i.d. The next morning I noticed marked circumoral pallor, a heavily coated tongue, and flushing of the skin of the chest and back. The throat, too, looked very suspicious of scarlatina. When, in the evening, the temperature rose to 103° F., there was little doubt in my mind that the case was one of true scarlatina. But as there was a faint possibility the condition might be due to sepsis, I swabbed out the uterus with tincture of iodine, followed by an intrauterine douche of the same (1 in 160) and injected 10 million stock streptococcus vaccine. A careful search revealed no tears of the cervix, vagina, or perineum; the uterus, too, was empty and well contracted, and the lochia quite sweet. Furthermore, I rubbed in pure eucalyptus oil after Dr. Milne's method. Next morning the rash was well marked. The milk, which had at no time been secreted freely, now dried up and the child was weaned. In the evening of the fourth day there was a rigor (104.4° F.). The patient was now becoming very restless and worn out from want of sleep, so I prescribed pulv. dig., gr. ¼, pulv. opii, gr. ¼, quin. sulph., gr. i—one pill three times a day. The throat from the first was treated every two hours with carbolic oil 1 in 10. There was another rigor on the sixth day (105° F.), but after that the patient gave little cause for anxiety. At this time the baby was noticed to be peeling slightly and was very fretful, but otherwise all right. Mother and child were removed to hospital on the thirteenth day, the baby by this time peeling profusely all over, including the hands and the soles of the feet, whilst the mother showed only slight signs of roughening over the chest and abdomen. At the time of writing (fourteen days later) the mother is peeling profusely, most markedly so on the palms and soles, and I think no one would dispute the diagnosis.

There are one or two interesting points:

First, as to how the infection was introduced. As the district nurse had not been in contact with any scarlatina cases I could only surmise that I had myself brought it. But I learnt later that the mother of a man who had failed with scarlatina a short time previously, came straight from his home (where she had washed his clothes, etc.) to the house of the patient, and washed her linen and clothes the day before she was confined, and had also been in the room with her; so that the source of the infection is proved.

Secondly, an interesting point is the efficacy of the eucalyptus method of rendering scarlatina paticats non-infectious. The contacts in this case were the husband, his daughter (aged 5 years), the district nurse, and myself. The husband and small girl had both been in the bedroom in spite of orders to the contrary. The district nurse was a very close contact, as, once the condition was diagnosed, she had to stay in the house and sleep in the same room as the patient—the dwelling being a four-roomed cottage. Mine, too, was naturally a fairly close contact. Not one of the four had had scarlatina, yet no one developed it. The nurse, however, got a very nasty "hospital throat" from nursing in such a small room, but nothing further.

I think the diagnosis cannot be doubted. The source of infection was traced, the patient had all the classical signs, and—most important of all—there was no digital examination of any kind made which could introduce sepsis, and the patient had no previous vaginal discharge.

The last point of interest was the mammary secretion. On arrival at hospital the patient expressed a wish to suckle her child, if her milk could be brought on again. I tried teaspoon doses of lactagol, advertised as a powdered extract of cotton-seed, three times a day. Two days later she began to give her child the breast occasionally; a week later she dispensed with the bottle altogether—*post hoc* or *propter hoc* I cannot say.

J. CHARSLEY MACKWOOD, M.R.C.S.Eng.,
Newick. L.R.C.P.Lond.

Reports of Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, November 13th, 1912.

Dr. HAIG FERGUSON, President, in the Chair.

Marriage and Childbirth.

DR. HAIG FERGUSON, in the course of a presidential address entitled, Some twentieth century problems in relation to marriage and childbirth, said that though he approved of the general principles of the maternity clauses of the National Insurance Act, he feared that the fashion in which it was at present intended to carry them out was likely to destroy the efficiency of the teaching of midwifery. Normal cases were necessary for teaching, and under the present regulations it was almost certain that usually the woman would choose the less expensive attendant, the midwife, and by remaining at home, retain a considerable sum for herself out of the benefit. Hence only abnormal cases would go to hospitals, which in this way would be depleted of the bulk of their teaching material. The dispensaries, too, would cease to have any maternity department, yet there would be no corresponding benefit to labouring women in a city like Edinburgh if for the supervised and senior dispensary student there were substituted the uninspected midwife. The Act would do serious harm to hospitals unless (1) the recipient of the benefit were allowed to retain part for her own use if she went to a hospital, and (2) unless attendance by a senior student under the medical officer of the hospital or dispensary were allowed to count as attendance under the Act. In reference to the biological aspects of marriage, he pointed out an inevitable antagonism between Nature and medicine. Nature was constantly endeavouring to eliminate bad stocks, while, whenever life appeared, it was the duty of the medical profession to preserve it. Though society could not be organized on the principle of a stud farm, much could be done by the suitable training of individuals for their racial duties. Such training should begin with the first breath of life. There was much that was pernicious in present educational methods—for example, the constant preparation for examination of young girls aged between 14 and 18. Its cessation would result in a stronger race of women. The diminishing birth-rate was largely due to voluntary causes. There had been no great increase in sterile marriages during the last forty years, whereas there had been quite an abnormal increase in the number of small families.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

Tuesday, November 26th, 1912.

Dr. FREDERICK TAYLOR, President, in the Chair.

Intestinal Ulceration.

DR. SIDNEY PHILLIPS described a case of fatal acute ulceration limited to the small intestine in a boy who had had rheumatism earlier in life. His parents and brothers and sisters were healthy. When seen he was pale and thin, the abdomen was tumid, and there was deep tenderness in the umbilical region. No other disease could be discovered. He got better, and left hospital, but returned later with abdominal pain and severe headache, vomiting and diarrhoea; the abdomen was more tender than before, and he had clammy sweats. The abdomen was opened in the mid-line; the appendix was found to be swollen, and there were many adhesions in its neighbourhood. The small intestine was intensely engorged with blood. The patient died the following day. Dr. Spilsbury found, at the *post-mortem* examination, blood-stained fluid in the peritoneum, the coils of intestine somewhat glued together and to the abdominal wall by recent plastic lymph. There was considerable haemorrhage into the mesentery, under the peritoneal reflection. There was no thrombosis of mesenteric vessels. The inner surface of the small intestine was much congested, and was denuded of mucous membrane over large areas, the submucous and muscular coats being exposed. The yellow areas appeared to be shallow ulcers. There were some slight pericardial adhesions. The ulceration was unlike that seen in typhoid fever or in tuberculous disease, or other known pathological cause of ulceration in the small intestine. There was evidence that colitis might result from the ingestion of frozen or otherwise preserved articles of food, and possibly this case resulted from a similar cause. The *post-mortem* lesions were more like those caused by tartar emetic than by anything else. Dr. LANGMEAD related a recent case in which similar *post-mortem* appearances were seen in a boy aged 9 years, who had suffered from scarlatinal nephritis three years previously. The kidney condition cleared up somewhat, but the uraemia from which he suffered later proved fatal. The intestines were deeply injected and adherent one to the other, and there was similar denudation to that described by Dr. Phillips in his case. There were also crateriform ulcers in all directions. Probably there would have been perforations but for the adhesions. Dr. MCCULLOCH suggested that the streptococcus might be answerable for the local lesion, and that the *post-mortem* findings resembled those of sprue.

Tachycardia.

Dr. C. E. LEA (Manchester) described four cases of auricular tachycardia. The first patient was a woman aged 40, who had typical mitral stenosis. There was a history of rheumatism, and she had an attack of paroxysmal tachycardia, arising in the auricle and persisting until death four days later. The pulse frequency was 150 to 160, and a tracing shortly before death showed the heart was passing into a state of fibrillation. During the tachycardia the patient was very prostrated, had intense thirst, and complained of great weakness. The second was a woman aged 50, who had what was thought to be a malignant condition of the throat, but it was acute lymphocythaemia, involving mainly the glands. A week before death the pulse-rate was 180 per minute. Here also there was great prostration and thirst. The third was a man aged 60, who was admitted because of dropsy and shortness of breath. He had had a healthy life and had not suffered from rheumatism. On admission the pulse-rate was 135, but 10-minim doses of digitalis three times a day brought down the pulse-rate in a short time to 80. It became a case of auricular flutter, and the auricular beats numbered about 260 per minute. The fourth was a man aged 50, who was in hospital as an ordinary case of cardiac muscle failure. He had had no rheumatism nor sclerosis. His pulse was noticed to miss occasionally at the wrist. In the last eighteen months he had not been free from the attacks more than three months at a time. The administration of digitalis improved him quickly after each attack.

Dr. GOSSAGE described a case of tachycardia which was quickly relieved by 5-minim doses of digitalis. Later the same patient got over the attacks without any treatment; hence the speaker considered the effect of the digitalis a coincidence. Dr. ALEXANDER MORISON pointed out that he described a similar condition in July, 1908, under the name "auricular tachycardia." Sometimes this abnormality might be not only seen but also heard.

Dr. COOK described a case in a lady in whom the symptoms seemed attributable to low blood pressure. She had been in bed four years, and her attacks were attended by extreme exhaustion and almost catalepsy, usually for a fortnight after the commencement of her monthly periods. Her blood pressure in these attacks was only 70 mm., and the pulse-rate rose from 84 to 160 and 180. Dr. Price examined her in one of these attacks, and determined that she had auricular fibrillation. Digitalis could not be taken, as it produced great sickness. The determining causes were supposed to have been typhoid fever some years before, and the shock caused by her father's death. Dr. GOODHART, jun., Dr. BATTY SHAW, and the PRESIDENT also discussed the paper, the last named commenting on the relatively small doses of digitalis which seemed to produce marked benefit. Dr. LEA replied.

PATHOLOGICAL SECTION.

AT a meeting on November 19th, Professor R. T. HEWLETT, President, in the chair, Dr. H. CHARLTON BASTIAN, F.R.S., delivered the address on "Further Experiments Concerning the Origin of Life" which was published *in extenso* in our last week's issue.

Effect of Radium on Muscle-Nerve Preparations.

Dr. W. S. LAZARUS-BARLOW and Mr. T. J. DUNBAR showed lantern slides illustrative of the effects of radium on the muscle-nerve preparations of the frog. The experiments were still in progress, but they demonstrated that the alpha rays had a marked effect in keeping up the irritability of the nerve and muscle. This was proved (1) by the longer survival of the radiated muscle-nerve preparation; (2) by the smaller stimulus it required to call forth a contraction as compared with the fellow muscle. Beta and gamma rays appeared to be without effect. The influence of alpha rays was exerted to some extent on the muscle fibres themselves (since a beneficial effect was observed in curarized muscle), but chiefly upon the nerve. There was reason to believe that the nerve-endings were uninfluenced, since a non-curarized muscle with the nerve cut close to its insertion behaved exactly like the curarized muscle. The experiments were a corollary to the finding of radium in the human subject by one of the authors.

Vaccine Treatment of Gonorrhoea.

Mr. J. E. R. MCDONAGH and Dr. B. G. KLEIN, in a paper on some points concerning the vaccine treatment of gonorrhoea, etc., observed that different strains of gonococci vary in virulence. They were not in the habit of using autogenous vaccines, but those prepared from a recently raised culture. Small doses repeated at from two to three weeks were preferable to larger more frequently given. The value of a vaccine could be estimated by its antigen value *in vitro*.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, November 21st, 1912.

Mr. ROBERT JONES, President, in the Chair.

DR. ARTHUR WALLACE, in a note on the control of *Eclamptic convulsions*, alluded to Dr. Leith Murray's suggestion that injections of magnesium sulphate solution into the spinal canal might be useful in eclampsia, as it had been found useful in tetanus. In two cases he had adopted it with success, employing a 25 per cent. solution of magnesium sulphate in a dose of approximately 1 c.cm. of solution for every 25 lb. of body weight. Dr. LEITH MURRAY, in discussing the note, said he did not think harm could be done by such injections, as, if there were any embarrassment of respiration, it would be a simple matter to wash out the spinal canal with an isotonic solution.

Dr. LLOYD ROBERTS, in a paper on the early symptoms of *Mediastinal tumours*, said he had treated recently thirty-six cases, The symptoms were due to the pressure on adjacent structures. When the large azygos vein was in question there was general anasarca of the body with effusion into the peritoneum and pleural cavity, but with no abnormality of the urine or the heart. In most cases the effusion was bilateral, but in some cases unilateral, when the pressure could be located to the region below the ninth dorsal vertebra where the veins of the two sides joined. Dr. T. R. GLYNN described the alterations in vocal fremitus as of value in diagnosing these tumours. He had found involvement of the spinal cord not infrequent, and in one case paraplegia had been the first sign of a growth. Dr. JOHN HAY alluded to the infrequency of general symptoms and cachexia in malignant disease of the root of the lung. Dr. W. PERMEWAN said that among the earliest symptoms he had noted a paralysis of the vocal cords on one side only, which did not cause any alteration of the voice. Dr. O. T. WILLIAMS mentioned a case in which a tumour giving rise to pain and a shadow in an *x*-ray photograph had disappeared under treatment, but had recurred with a fatal result within three years. Dr. R. J. M. BUCHANAN said that effusion into the pleura never gave the same complete absence of fremitus as an obstructed bronchus, and he had found an ineffective and irritative cough often an early symptom.

Dr. FRANCIS BAILEY, in opening a discussion on the *Technique of ether administration*, expressed an opinion favourable to the use of atropine, morphine, etc., if they were given in moderate doses, and from half to three-quarters of an hour before the anaesthetic. Mr. R. E. KELLY described the experiment of Henderson of Connecticut, who had in the laboratory reproduced all the errors of unskilful administration of anaesthetics, and so had demonstrated the causes of fatalities ascribed to status lymphaticus. The real cause of failure of respiration was deep breathing and intermittent anaesthesia; with over-deep breathing carbonic acid was not present in sufficient quantity to keep the respiratory centre active. Cardiac failure was due to prolongation of the struggling stage or to pain during the intermittence of administration. Anaesthetics should not be mixed, and no operation should be done under partial anaesthesia. Ether pneumonia was not due to the ether, but to septic saliva being present in the bronchi. Mr. THELWALL THOMAS agreed that anaesthetics should not be mixed. It was ether which should be used. The intratracheal method had a field of usefulness in cases in which respiratory movements interfered with the operation, as in difficult gall bladder cases, and in mediastinal and tracheal work.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

AT meetings on November 7th and November 21st, Dr. STANLEY RISELEY (President) in the chair, Dr. HAROLD LEADER, in a paper on *Pneumococcal infections*, confined his remarks to cases occurring in early life. Some of the difficulties experienced in the differential diagnosis between fibrinous pneumonia and bronchopneumonia were considered. A brief review of the complications of pneumonia was given, special attention being paid to pericarditis, it being stated that this condition was commoner than was generally supposed, but that it was seldom diagnosed. Mention was made of other organs in the body occasionally infected by the pneumococcus either primarily or secondarily. Sections from a case of bronchopneumonia with empyema and pericarditis were on view, showing pneumococci in the lung, spleen, and kidney. Dr. A. E. NAISH, in a paper on the *Diagnosis of intrathoracic tubercle in childhood*, quoted figures to show the great discrepancy between *post-mortem* and general death statistics, as to the actual number of deaths from tuberculosis, the proportion of intrathoracic to abdominal tubercle and the age distribution. He concluded that a large number of young children must die annually from pulmonary tubercle in whom the cause of death has not been determined, and that these deaths occur mainly under the age of 5. The diagnosis frequently presents great difficulties, but in view of the fact that pulmonary tuberculosis is a frequent result of a primary infection of the mediastinal glands, the greatest attention should be bestowed on the physical signs and symptoms of the latter. The value of various physical signs was discussed. Mr. W. S. KERR showed a man with *Tonsillar calculi*, who had also a swelling in the region of the right submaxillary gland with typical signs of salivary calculus. Mr. ALAN TURNER showed two infants with *Enlargement of the spleen* and liver. One had marked leucocytosis with other signs of acute myelogenetic leukaemia. The other case was obscure with no leucocytosis or marked blood changes. In both the Wassermann reaction was negative. Dr. ARTHUR HALL, in a paper on *Remedies, ancient and modern*, expressed the opinion that some old-fashioned methods of treatment, as by leeches, linseed poultices, blisters, etc., might be more frequently used with advantage. He advocated the necessity of giving large doses of sodium salicylate in acute rheumatism, and referred to the use of "regulin" in selected cases of chronic constipation. Mr. W. W. KING showed the following specimens: (1) Torsion of the pedicle of a *Cystic teratoma of the ovary* in a patient whose symptoms strongly resembled those of a ruptured ectopic gestation; (2) *Malignant papilloma* of the ovary with secondary deposits in the omentum. The growth appeared to arise in a cystadenoma, but the great degeneration of the tumour made an exact diagnosis impossible.

HARVEIAN SOCIETY.

AT a meeting on November 21st, Dr. H. J. MACEVOY, President, in the chair, Dr. GOSSAGE, in a paper on *Heredity*, pointed out that the subject was inextricably mixed up with the question of evolution, and then discussed the three chief theories of evolution—that of Lamarck, that of Darwin, and the mutation theory. The evidence in favour of any of these was founded on the study of animals and plants, but they could be illustrated from human beings. Human evidence was, however, insufficient to establish any point. Lamarckism, or the inheritance of acquired characters, must be regarded as disproved by the work of Weismann. Between the other two theories it was at present impossible to decide. Darwinism failed to convince from the lack of conclusive evidence of evolution by the selection of fluctuating variations, while there were many difficulties to overcome and apparent exceptions to be explained before the mutation theory and Mendelism could be definitely accepted. Mr. W. H. CLAYTON-GREENE read a paper on some bacterial *Infections of the urinary tract.*

MEDICO-PSYCHOLOGICAL ASSOCIATION.

AT the quarterly meeting on November 26th, Dr. J. G. SOUTAR, President, in the chair, Dr. SIDNEY COUPLAND described the various classifications of causes of death used at Somerset House since 1838, and in consequence of recent changes therein put forward a new schedule for use in asylums. In the discussion which followed Dr. MERCIER pointed out that there was great difference of opinion as to what in any connexion constituted a cause; and even if there were any agreement on this point, it still had to be determined from what point of view a given circumstance was a cause. In the case of a deceased person who had had syphilis, and an aneurysm and a rupture thereof, which condition was the primary cause of death, which secondary, which the principal, which the contributory? Often the attributed cause was the one in which the certifier happened to take most interest. Dr. HUBERT BOND emphasized the desirability of asylum deaths being returned in such form as to be comparable with the forms used at Somerset House for those among the sane population. In many cases no medical man could possibly say what was the principal cause of any given death, no matter how cleverly classifications were framed. Scientific accuracy would best be served by the abolition of any attempt to separate causes. Dr. ABDY COLLINS and others adopted a like view, the former also contending that the real primary causes of death were but few, and that the sooner this fact was recognized for statistical purposes the more accurate vital statistics would be.

Reviews.

OSLER'S "MEDICINE."

THE reviewer is tempted to feel that all that need be said of the new edition of OSLER'S *Principles and Practice of Medicine*[1] is that it has been published, and that the student of medicine should forthwith replace the older seventh edition by the new and latest one. True as this is, something is due to Sir William Osler on occasions like the present one. His textbook has become so universally accepted as "guide, philosopher, and friend" in matters of medical interest that he practically sets the current of medical ideas. So carefully does he keep his finger on the pulse of medicine that he has been accepted as the interpreter in the English language of contemporary points of view. There is scarcely any investigation of importance on the other side of the Atlantic or on this, including Continental centres of activity, which does not receive from his pen due consideration. So encyclopaedic is his erudition that his grateful readers are filled with wonder at the organization, the wide reading, and the carefully weighed verdicts which have made his textbook a criterion for the medical student and practitioner of what is accepted by the profession. The reviewer has grown old since the issue of the first edition in 1892; each edition has seemed to mark the advent of some forward step in medical science, and if asked to say what is the special feature the present edition accentuates, it would be answered that, as the author himself states, it is the extraordinary development of knowledge of infectious diseases, particularly in connexion with typhoid fever, tuberculosis, syphilis, certain tropical diseases, the sporotrichoses, poliomyelitis, and infections by the colon bacillus. Another feature which is very patent is the large addition to medical knowledge which centres around the principle largely enunciated by the English school of physiology, namely, of hormonic influence. The morbid states which can fairly well be attributed to disorders of internal secretion receive full consideration in a section which deals with diseases of the ductless glands, notably of the parathyroids and pituitary body. Infantilism, which but a few years ago was a subject hardly admitted within the pale of accepted entities, is now shown to be clearly crystallized.

No reference to the present edition, in which the original author has associated with himself Professor McCrae of Philadelphia, would be complete unless, besides noting the general tendencies it reveals, attention were called to certain particular features. One of special interest is the suggestion made by Dr. G. A. Gibson that the prognosis in pneumonia may probably be considered good if the blood pressure, measured in millimetres, does not fall below the figure which represents the pulse-rate per minute. A sign of special diagnostic value in meningitis is that due to the observations of Brudzenski, that flexing the head on the chest causes flexion at the hip and knee joint, and flexing one leg on the trunk produces the same movement in the other leg. Camptodactaly, described by Landouzy, is a curious limited extension of the ring and little fingers met with in pulmonary tuberculosis. The conditions described by Fournier as parasyphilitic affections may now be more reasonably described as quaternary syphilis. "Ptomaine poisoning" is an expression which it is now generally acknowledged should be replaced by "food or meat poisoning," but mytilotoxin still exists as the one example of a true ptomaine, which on ingestion causes symptoms, and which so far has not been demonstrated to be due to the action of bacteria upon the mussel.

Gout is dealt with most admirably from the modern standpoint, and we begin to see why it is that in man especially the complete oxidation of uric acid may be absent owing to the deficiency in "uricase." Sir William Osler runs atilt now and again against fashion, as when he says of "neuritis" that it has been replaced by "mucous colitis." The subject of urine examination also receives a disabling blow, and we can but agree it is deserved. It is pointed out that after 40 years of age, from the insurance point of view—and he would add from every point of view of the practitioner also—examination of the state of the arteries and of the blood pressure is more important than that of the urine. Attention is also called to the importance of using phenol-sulphonephthalein (Rowntree and Geraghty) as a means of testing the functional capacity of the kidney.

Room is wisely found for the recent work of Head and Gordon Holmes on the sensory tracts in the brain, whereby it enables them as it were to postulate, as a result of the occurrence of lesions in the neighbourhood of the thalamus, a sort of "sensory" spasticity parallel with the motor spasticity associated with lesion of the pyramidal tracts; impressions are disturbed and so exaggerated as to become painful. Those who desire a sketch of the significance of the Breur-Freund theory, stigmatized, as we think rather severely, as a "vogue," will find information in the section dealing with hysteria.

We have reserved for final reference some remarks on the subject of tuberculosis, a subject which in this country, at least, is at the present time receiving such close attention. First of all we must call attention to passages on page 159 (elaborated on page 161), in which references are made to specific reactions. We read that an animal inoculated with *dead* cultures of tubercle bacilli, if susceptible, becomes tuberculous and dies. Does Sir William Osler mean this, or is there some error in the correction of the proof? Secondly, we read that Koch found that "if to a guinea-pig with a subcutaneous focus of tuberculosis so caused a second injection of the bacillus (? living or dead) was given, healing occurred in the primary nodule, *and the animal did not die.*" Those famous experiments made by Koch, and upon which he based his belief in the therapeutic value of tuberculin, have been made use of by various authors in support of the value of tuberculin, and on p. 227 Sir William Osler says, "unquestionably in suitable cases it [tuberculin] has a very beneficial influence." How salutary would it have been, therefore, if Sir William Osler had added to his remarks on Koch's original experiments a statement of the fact that there is no record (so far as we know) that Koch ever proved that he had cured an animal, suffering from experimental tuberculosis, by means of tuberculin. We know that the attempt to do so has also failed at the hands of others in more recent times, even in cattle in whom tuberculosis follows much more closely the chronic course met with in human beings than the acute course met with in guinea-pigs. When one thinks of the immense importance at the present day of a clear account from the pen of Sir William Osler of the true state of affairs with regard to the alleged cure in a specific sense of experimental tuberculosis, statements like the above are disappointing. Further, the italicized paragraph on page 231 gives rise to the feeling that over-enthusiasm has induced one of the accepted authorities of the day, in the face of the searching criticism uttered by Professor Karl Pearson, to be over-sanguine as to the value of early diagnosis, sanatoriums, tuberculin, etc., in the treatment of tuberculosis. It is quite true that the percentage mortality from pulmonary tuberculosis has from 1830 to 1891 very materially fallen, as judged by figures supplied by the medical profession themselves; the same source of information also shows that coincidently with the introduction of sanatoriums and of tuberculin, the percentage mortality has not fallen at the same rate as previously—in fact, is stationary in males, and is beginning to rise in females. It is true, as Sir William Osler says, our profession must acknowledge the arrival of the modern iatro-mathematical school; one of its chief contributions to the study of tuberculosis is to show that, despite all our enthusiasm for and belief in the so-called modern treatment, the disease is following in the lines of acuter forms of epidemic infection, and that the vaunted improvement in the death rate from pulmonary tuberculosis is due to natural rather than to therapeutic agencies. We ask Sir William Osler to forgive this criticism of the section of tuberculosis; other parts of it show how discerning and critical he is, and we are simply pointing to a "spot in the sun."

[1] *The Principles and Practice of Medicine.* By Sir William Osler, Bt., M.D., F.R.S., F.R.C.P., Regius Professor of Medicine in the University of Oxford; Honorary Professor of Medicine, Johns Hopkins University. Eighth edition, largely rewritten and thoroughly revised, with the assistance of Thomas McCrae, M.D., F.R.C.P., Professor of Medicine, Jefferson Medical College, Philadelphia. New York and London: D. Appleton and Co. 1912. (Roy. 8vo, pp. 1225; charts 20, figures 19. Price 21s. net.)

THE PROTOZOA.

PROFESSOR MINCHIN'S *Introduction to the Study of the Protozoa*[2] is really a more exhaustive and comprehensive volume than its title implies. It is certainly an introduction, but it is not in any sense an elementary one, and many readers will find in it information more than ample for their requirements. The aims of the author are obviously utilitarian and practical, but, while special attention is devoted to parasitic forms, the general arrangement of the work is such that they do not assume a position of inordinate importance. The book, in fact, is written on strictly academic lines, and the usual sequence of general introductory chapters, followed by special systematic parts, is adopted.

The early chapters contain a very full account of the organization and physiology of the protozoa in general. No subject, however debatable or intricate, is shirked, and Professor Minchin's exposition is in practically every case clear and reasonable. Some objection may be taken to the exuberance of detail, which occasionally tends to obscure the main theme, but this is wellnigh unavoidable in a volume of such comprehensive scope. On most disputed points—and there are many—Professor Minchin gives, as a rule, some definite guide. His extremely keen critical faculty enables him to estimate the value of the very numerous conflicting observations, but in summing up he at times displays a hesitancy which may prove disappointing to those in search of a dogmatic pronouncement.

The systematic part of the work gives an interesting account of the enormous wealth of form met with in the protozoa. It is well arranged and sufficiently full to afford an accurate idea of the affinities and systematic positions of the various groups. Considerable attention is devoted to problems of general biological interest, upon which the study of the protozoa may throw considerable light. These, which Professor Minchin terms the fundamental mysteries, include such subjects as sex and polymorphism, and the chapters dealing with these form particularly interesting reading. The phenomena associated with parasitism are brought prominently forward throughout the book, and the parasitic forms, especially those related to man, receive very full treatment. A few new technical terms have been introduced, the most important of which is the substitution of the adjective "chromatinic" for "chromatic" in reference to the chromatin elements. This appears to be well advised. A group which is of particular interest is the *Sporozoa*, which term the author retains "without prejudice to the systematic position of its constituents." At the same time the flagellate affinities of the *Telosporidia* are fully discussed. The identity of the blepharoplast, again, affords subject for some lucid exposition. The volume is very elaborately got up, but is rather expensive for its size. The illustrations, which are the work of Miss Rhodes and Mr. Brook-Greaves, form a particularly commendable feature.

TREATMENT OF INEBRIETY.

DR. HARE'S work on *Alcoholism*[3] is based upon the treatment of 868 cases admitted to the Norwood Sanatorium during a period of six and a half years. Of this number 762 were the subjects of alcoholism. The book is marked by candour, common sense, and moderation, and the clinical histories of numerous illustrative cases support the conclusions reached. Dr. Hare holds that though alcoholism may amount to a disease, in a very large proportion of the cases it is only an exaggerated self-indulgence, and to inculcate the doctrine that inebriety is a disease over which the drinker has no control is to destroy the greatest incentive to amendment.

The author shows conclusively that alcohol taken during only the pyrexial stage of acute illnesses sets up no after-crave. When alcohol is taken during the weakness and depression of convalescence the danger of establishing the habit is great. The patient who consumes medicated wines of high alcoholic percentage during convalescence incurs grave risk of becoming an inebriate, and the use of such wines has accounted for a number of relapses into inebriety. The chapter on causation shows that in all cases a physical cause for the habit should be sought. Even such things as high arterial tension, errors of refraction, want of accustomed exercise, and a heavy meal too near bedtime, have been found to keep up the habit. Dr. Hare divides alcoholists into intermittent and chronic drinkers. The former comprise the true dipsomaniacs, in whom there is a periodic crave for the drug, and the pseudo-dipsomaniacs, who drink at irregular intervals, with no crave until after the first glass. Chronic drinkers are the true inebriates, of whom there are two groups—the chronic inebriates, and those who, by a tolerance similar to that acquired by the opium eater, can consume large doses of alcohol and yet escape drunkenness. In the last group, alcoholism is a drug habit, and the sudden stoppage of the alcohol is as apt to be followed by untoward symptoms as the abrupt withholding of the opium-eater's drug. Numerous cases are given showing that, where tolerance is established, epilepsy and delirium tremens follow the abrupt discontinuance of the alcohol. The author describes how by "tapering off" the alcohol, delirium tremens and epilepsy may be avoided. He adopts the theory that a poisonous "anti-alcohol" forms, and this, if not neutralized by sufficient though gradually decreasing doses of the drug, starts the nervous sequelae. Prognosis is discussed, the Norwood treatment outlined, and statistics given; 51.82 per cent. of the cases were total abstainers when last heard from, whilst 45 per cent. relapsed. The observations on alcoholic albuminuria are, like the whole book, suggestive and practical. The work is a clinical record, likely to become the standard text-book for the guidance of all who have to grapple with the difficulties of the treatment of inebriates.

OTO-LARYNGOLOGY.

IN *The Operations of Aural Surgery*[4] Mr. C. ERNEST WEST and Mr. SIDNEY SCOTT have given in a very convenient form a description of all the common operations upon the ear, including those performed for the relief of the intracranial complications of chronic middle ear suppuration. A definite plan is followed throughout. One chapter is devoted to each operation in turn. First of all, the scope of the operation is exactly defined; next, the indications for performing the particular operation are tabulated, followed by a list of the contraindications. The preparation of the patient, general and local, is next described; a complete list of the instruments required is given, and then the technique of the operation itself is told in detail step by step. The descriptions are completed in each case by directions as to the dressings required, the after-care of the patient, and, where necessary, the sundry pitfalls into which the operator may stumble. The descriptions are admirable in every way, and the information is imparted in a clear and concise style. The advice as to the choice of operation is thoroughly sound and very lucidly expressed. The value of the book is increased by an appendix containing the notes of typical cases to illustrate the results obtained by the various operations, and the sundry difficulties which may arise afterwards. The book is well illustrated by excellent photographs, the majority of them representing instruments required in each case. There is only one criticism we should like to offer—and that is, that a few more diagrams to illustrate the stages of the different operations might have been inserted. The book is a thoroughly trustworthy guide for any one who wishes to undertake operative aural work.

In his book, *Diseases of the Ear, Nose, and Throat*, Dr. WENDELL CHRISTOPHER PHILLIPS[5] has endeavoured to present a comprehensive survey of the main diseases

[2] *An Introduction to the Study of the Protozoa.* By E. A. Minchin. London: Edward Arnold. 1912. (Med. 8vo, pp. 550, with 194 illustrations. 21s.)

[3] *On Alcoholism: its Clinical Aspects and Treatment.* By Francis Hare, M.D., Medical Superintendent of the Norwood Sanatorium, Beckenham. London: J. and A. Churchill. 1912. Crown 8vo, pp. 282. 5s. net.)

[4] *The Operations of Aural Surgery.* By C. Ernest West, F.R.C.S., Aural Surgeon to St. Bartholomew's Hospital, and Sidney R. Scott, M.S., F.R.C.S., Assistant Aural Surgeon to St. Bartholomew's Hospital, late Aural Surgeon, Evelina Hospital for Sick Children. With illustrations. London: H. K. Lewis. 1909. (Demy 8vo, pp. 213. 7s. 6d. net.)

[5] *Diseases of the Ear, Nose, and Throat, Medical and Surgical.* By Wendell Christopher Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye, Ear and Throat Hospital, etc. Illustrated with 545 half-tone and other text engravings, many of them original, including 31 full-page plates, some in colours. Philadelphia: F. A. Davis Company; London: Stanley Phillips. 1911. (Roy 8vo, pp. 853. 25s. net.)

which occupy the attention of the oto-laryngologist, and to outline the principles of modern treatment applied to them. The work is founded on the lectures delivered by the author at the New York Post-Graduate School, and is designed to meet the needs of the general practitioner and surgeon as much as the specialist. In addition to describing fully the symptomatology of different diseases, the author, where necessary, gives a detailed account of the various operations most commonly performed, such as is usually only met with in the textbooks of operative surgery. These descriptions are accurate and up to date. The subject matter of the book is well written and clearly stated, and includes practical chapters on the direct endoscopy of the larynx, trachea, bronchi, and oesophagus. The book is well illustrated, and quite up to the high standard of the modern textbook.

Since Toynbee and Sir Morell Mackenzie wrote their classical books the output of "textbooks," "atlases," and "systems" on disease of the ear, nose, and throat, has been annually increasing, so that the needs of those knocking at the door of this special department have been amply provided for. Dr. KATZ, Professor PREYSING, and Dr. BLUMENFELD have produced a work[6] which is intended primarily for those already engaged in this *dreibund* of special practice. Inasmuch as it does not touch upon the A, B, C of the investigation and treatment of diseases of the ear, nose, and throat, it is not in the strict meaning of the word a textbook on the subject; neither, in spite of the abundance of plates in colour and photograph, can it be regarded as an atlas; nor is it a system, as it deals with only one aspect of those diseases—namely, the X, Y, Z of their treatment. It is essentially what the title states—a handbook of the special surgery of the ear and upper respiratory tracts. It covers a vast field contained within a small territory, and its appearance is more than justified by the remarkable development within a few years of this important territory. The handbook is comprised in four volumes, and each volume has several parts. The book has been published in fasciculus form, each containing one or more parts of a volume. Separate parts are not obtainable, but volumes I and II, or I and III, or I and IV are obtainable apart from the other volumes. Volume I is devoted to topographical anatomy and general matters, and volumes II, III, and IV to the surgery of the ear, nose, and throat respectively. It is impossible within the limits of our space to review adequately a handbook of this size. In addition to indicating the general scope of the book we can deal only with the more prominent features of the volumes and parts of volumes that have reached us. Bearing in mind the aim of the work, it is only natural that the topographical anatomy should occupy a large part of the first volume. To this section Professor Sobotta of Würzburg contributes the anatomy of the head, the buccal cavity, and the neck, including the oesophagus, the bronchial tree, and the mediastinum; Professor Onodi of Budapest, that of the nose and the accessory nasal sinuses; Professor Stenger of Königsberg, that of the ear; and Dr. Most of Breslau, an account of the lymphatic vessels and glands of the head and neck. Then follow short sections on anaesthesia and treatment by passive hyperaemia. The second half of the first volume deals with phlegmonous inflammations of the upper respiratory tract, general and specific treatment of septic diseases, the mechanical and bloodless methods of overcoming stenosis of the upper air passages, cosmetic operations, and the diagnosis of disease by means of the Roentgen rays. Volumes II, III, and IV cover the field of special surgery of the ear, nose, and throat. Amongst the many contributors to these three volumes we notice the names of the three editors. Dr. Katz writes on intranasal surgery, Professor Preysing on the surgery of the middle ear and of the labyrinth and intracranial complications, and Dr. Blumenfeld on intralaryngeal surgery. The work throughout is profusely illustrated and well printed, the articles, as we remarked in our preliminary notice in the earlier part of the year, contain much sound matter, and constitute a valuable work for reference.

[6] *Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege.* Herausgegeben von Dr. L. Katz, Dr. H. Preysing, und Dr. F. Blumenfeld. Würzburg: Ctur Kabitzsch (A. Stuber's Verlag). 1911.

MEDICAL JURISPRUDENCE.

THERE is no clue in the preface to Dr. C. O. HAWTHORNE'S book on *Forensic Medicine and Toxicology*[7] as to the circumstances in which it was written, but, from internal evidence, we rather judge it to be the published form of his lectures on the subject, and can easily understand why the book has reached a third edition. Dr. Hawthorne has an appreciation of the niceties of the English language, and he here presents his best to his readers and makes the chapters a treat to read, though we have to confess that we cannot find anything that is very new and startling in the facts; it is the way in which old facts are expressed that makes the charm of the book. Everything that a student requires is contained in the work, without any superfluous technicalities of use only to the specialist. Of all the excellences of the book we think the chapter on the differential diagnosis in cases of unconsciousness one of the best; it reads like a novel, but it is like an old favourite—it can be read again and again with increasing interest and benefit. We can cordially recommend these lectures, if such they be, to those, and they include most students, who think the subject dry, uninteresting, and tedious in its minuteness—a perusal of it will give them very different notions.

The second edition of Mr. RAMES CHUNDRA RAY'S *Outlines of Medical Jurisprudence*[8] is a great improvement on the first, of which an appreciative notice was published in our issue of May 13th, 1911, p. 1118. The present edition has been thoroughly revised and largely rewritten, and extended to about twice the size of its predecessor. It contains useful additions regarding such matters as insanity, life insurance, the detection of forged handwriting, malingering, etc. Throughout the book valuable information is given regarding laws, legal responsibility and procedure, and in the appendix there is an interesting and helpful comparison between English and Indian law as affecting different conditions and offences. The disposal of lunatics under various circumstances is clearly and summarily indicated. The author has evidently expended much well-directed labour on the preparation of this edition, which is admirably adapted to fulfil the objects for which the compilation was originally prepared—namely, to provide a handbook for lecturers and students and a work of ready reference for medical and legal practitioners in regard to matters affecting life and involving legal responsibility. For use as a textbook and for preparing for examinations no better treatise can be placed in the hands of teachers or students, and the busy practitioner will find easy access to any subject on which he may require accurate and concise knowledge. The work is, in short, a marvel of condensation and systematic exposition, and possesses cosmopolitan value.

NOTES ON BOOKS.

IN a pamphlet entitled *Instruments and Appliances for Operations*,[9] Lieutenant-Colonel R. H. CASTOR, I.M.S., has set forth some rules for the preparation and upkeep of operation rooms, and supplies an anatomically classified list of operations which includes information as to the position of the patient and the instruments used. The author's experience at the hospitals to which he has been attached has led him to think that such a book would supply a genuine need among medical officers and dressers. The preface contains two curious statements, one being to the effect that though the "chief aim has been to include a brief list of the different instruments required for operations," the lists given "are, of course, not complete," while the sections "on the eye, ear, and teeth are necessarily curtailed." It is hardly obvious why in such a volume the lists given should not be complete or any subject curtailed. Indeed, the less the frequency with which operations on certain areas are performed, the greater would seem to be the likelihood of those for whom the book is written requiring information concerning them.

[7] *Forensic Medicine and Toxicology.* By C. O. Hawthorne, M.D. Third edition. London: Edward Arnold. 1912. (Cr. 8vo, pp. 350; 6s. net.)

[8] *Outlines of Medical Jurisprudence and Treatment of Poisoning; for Students and Practitioners.* By Rames Chundra Ray, L.M.S. (Cal. Univ.). Second edition. Calcutta: Published by the Proprietor of the Haro Pharmacy. 1912. (Crown 8vo, pp. 466. Price Rs. 4, or post free 5s. 6d.)

[9] *A Short Guide to the Instruments and Appliances required for Operations and the Dressing of Cases.* By R. H. Castor, Lieutenant-Colonel I.M.S. Calcutta: Thacker, Spink, and Co. 1912. (Cr. 8vo, pp. 40; 1s.)

Truth Doll Show.

It was about the year 1880 that the first of the well-known *Truth* Doll Shows was held, and some two dozen dolls were exhibited to an admiring public before being distributed amongst the little inmates of various hospitals and workhouses. Since then the number of toys on view at each successive exhibition has increased to many thousands, and for many years past the *Truth* Doll Show has been more or less of a society function, and the *Truth* Toy Fund has brightened the lives of countless sick and lonely children. But money is needed to carry on this work of charity; and it is to this fact we owe the appearance of a dainty little book by Miss Muriel Harris, entitled *The Truth History of Dolls*.[10] This little volume, the proceeds of whose sale are to be devoted to the *Truth* Toy Fund, is well worth reading. From the very earliest times children of all races have played with dolls; and Miss Harris has traced the evolution of these miniature babies from the earliest known specimens in existence—the flat wooden playthings that satisfied the maternal cravings of the little Egyptian girl four thousand years ago—to the gorgeous creatures in Parisian toilettes that decorate the show windows to-day. Slight as it is, this history of the toys of bygone years is full of interesting matter, and bears all the marks of careful and systematic research. Her work has evidently been a labour of love to Miss Harris, who has handled her mass of material with considerable skill, and presented it to her readers in a concise and eminently readable form. Her book possesses an additional attraction in the clever illustrations of Mr. O. M. Hueffer, who has contributed a number of pen-and-ink drawings of different types of ancient and modern dolls.

Visiting Lists.

The edition of *Wright's Visiting List* prepared by Dr. Robert Simpson for the approaching year presents many good features, one being an ingenious system of interleaving, thanks to which a patient's name need be entered only once a month. The space for the names and entries is also interlined in red to avoid errors. Other good points are the provision of plenty of room for recording of cash payments and journal totals, as also for notes as to consultations and obstetric and vaccination engagements. Another useful feature is the provision of pages on which to record week by week all motoring expenses and other particulars, including distances run. The book is published in two forms; one of them, known as Form B, has no date entries, so can be used in any year. In each form six different sub-editions are obtainable, these varying in the number of patients a month for whom provision is made, the lowest being 40 and the highest 240. The prices vary from 5s. to 7s.

The sixty-seventh edition is now available of the diary and almanac for physicians and surgeons, published under the name of *Smith's Visiting List* by Messrs. Hazell, Watson, and Viney, of Long Acre. It is a very comprehensive production of the kind, and its popularity is well founded. Its special feature, perhaps, is the provision at the end of each week's entries of a journal page on which can be summarized the work done on each day. Apart from entries as to visits, there is plenty of space for the recording of cash transactions or bills sent out, and of notes as to obstetric engagements, including the agreed fee, the result of the case, and other points, such as patients' and nurses' addresses, and instruments and drugs required. The earlier pages, in addition to other memoranda, contain tables for calculating gestation periods, physiological data, and the addresses of institutions which cater for certain classes of patients. The list is published in four forms and several different bindings, some containing space for 25 patients only, and others for as many as 100. In some the journal pages are omitted. The prices vary from 2s. 6d. to 5s. 6d.

Christmas Books.

It is perhaps only on looking through the vast assortment of books intended for the delectation of the rising generation at Christmas time that one realizes how much the modern child has to be thankful for. The days are gone for ever when *The Fairchild Family* and a few severely moral tales of the same type were all that was considered fit reading for the young; and nowadays the schoolroom, and even the nursery, have a literature and favourite authors of their own. Foremost amongst the latter stands E. Nesbit, whose charming stories have long ago obtained for her a large place in the affections of children of all ages. Her latest book, *The Magic World*,[11] is a collection of fairy tales, and affords one more proof of her fertile imagination, her gift of narrative, and her thorough understanding of child nature. Her boys and girls are delightfully human and natural; and their marvellous adventures are the only point in which they differ at all from the living children for whose amusement they have been created. Mrs. Nesbit's little readers will find plenty of incident and excitement in these pretty stories, whose healthy tone renders them ideal occupants of the nursery book-shelves. *The Magic World* should prove an attractive Christmas gift for children of either sex, whilst its gay binding and the many excellent illustrations by H. R. Millar and Spencer Pryse should render it doubly pleasing to its fortunate recipients.

There are some books that, though primarily intended for the children, are read with almost equal pleasure by the grown-up members of the family. Such a book is *White-Ear and Peter*,[12] by Mr. Neils Heiberg, which will probably appeal to the sportsman and the natural historian even more forcibly than it will to a child. No one but a lover of animals could have written the life story of White-Ear, the half-tamed fox, who runs amok and finally returns to his native wilds. The contrast between his struggle for existence and the careless happy life led by his enemy, the fox-terrier Peter, is finely drawn; and the author has managed to show in subtle fashion how inexorable is Nature's law of retribution, which prevails over brute creation as it does over human affairs. It is a tragic little history, for the lives of most wild animals end in violence; and White-Ear expiates the crimes of a lifetime by a miserable death. But there is another and brighter side to the picture in the adventures of the terrier Peter, whose unbounded energy and high spirits lead him into all sorts of tight corners, and also in the half humorous, half pathetic descriptions of life in the stableyard and kennels. Mr. Heiberg is evidently a very close observer, and these studies of animal nature are admirably done. His book owes as much to its fresh and vivid character-drawing as to the interest of its plot; and the charm of the narrative is fittingly interpreted by Mr. Cecil Aldin in his beautiful coloured illustrations.

A book made beautiful by the illustrations, exquisitely reproduced, of Warwick Goble is the collection of *Folk Tales of Bengal*, by the Rev. Lal Behari Day.[13] The stories were taken down, for the most part, from the lips of an old Bengali woman, but the barber told three, and an old servant two, and two old Brahmans others. The author, from his experience as a boy, believes that the tales are genuine samples of the stories told to Bengal children for hundreds of generations. They are as fantastic as well can be, with all the inconsequence of the genuine fairy tale. And the coloured illustrations are altogether charmingly in the spirit of the text—princesses more lovely, king's eldest sons more handsome, gardens and glades more mysterious than the heart of the western man can image. It is a perfect gift book.

Another book of the same kind, issued by the same publishers, and illustrated with the same dainty imagination by the same artist, is the volume entitled *Green Willow and Other Japanese Fairy Tales*, collected from various sources by Grace James.[14] These tales will perhaps appeal more than those of Bengal to the British spirit. They are fantastic, as are all true fairy tales, but they have greater variety of subject, and seem to mean more, or to imply more, and to breathe a certain spirit of chivalry which cause them to fit better into the European scale. They seem to have appealed strongly to the illustrator, whose method produces the effect of illuminations on parchment. A more delightful gift for a girl with any moving of the artistic spirit could scarcely be found.

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[10] *The Truth History of Dolls.* By Muriel Harris. Published by the *Truth* Publishing Company, Ltd. Sold for the benefit of the *Truth* Toy Fund. (Pp. 44. Price 6d.)

[11] *The Magic World.* By E. Nesbit. With illustrations by H. R. Millar and Spencer Pryse. London: Macmillan and Co., Ltd. 1912. (Post 8vo, pp. 290; illustrations 24. Price 6s.)

[12] *White-Ear and Peter.* The story of a fox and a fox-terrier. By Neils Heiberg. With sixteen coloured plates by Cecil Aldin. London: Macmillan and Co., Ltd. 1912. (Fcap. 4to, pp. 232. 6s. net.)

[13] *Folk Tales of Bengal.* By the Rev. Lal Behari Day. With 32 illustrations in colour by W. Goble. New York, London: The Macmillan Co. 1912. (Cr. 4to, pp. 288. 15s. net.)

[14] *Green Willow and Other Japanese Fairy Tales.* By G. James. With illustrations in colour by Warwick Goble. London: Macmillan and Co., Ltd. 1912. (Demy 8vo, pp. 290; illustrations 16. 5s. net.)

FRIEDMANN'S TUBERCULOSIS VACCINE.

ON November 6th Dr. Friedrich Franz Friedmann read a paper on the treatment of human tuberculosis before the Medical Society of Berlin. The early publication in the *Berliner klinische Wochenschrift* (November 18th) of this paper, and of the long discussion which followed, is all the more satisfactory, as many wild and garbled versions of the treatment have been published in the lay press. We cannot, of course, presume at this stage to pass judgement on the merits of the treatment, abundant though the clinical material already is, but before discussing it we would like to express approval of the reserve which was maintained until the vaccine had been tested for over two years, and many hundreds of patients had been treated. This reserve is all the more praiseworthy, as the rush from the laboratory to the publisher to peg out a claim to fame has become deplorably common.

Nature of the Vaccine.

In his introduction Friedmann reviewed the treatment of tuberculosis by vaccines from the first appearance of Koch's "Alt Tuberculin" to the present time. Attempts to produce a tuberculin that is both potent and non-toxic have failed hitherto; this appears to be inevitable so long as virulent strains of bacillus are used whose virtues are quickly lost by processes intended to rob them of their toxic constituents. Hence arose the idea of inoculating a non-virulent bacillus which can be injected without being first subjected to such processes. Attempts to cultivate such a non-virulent bacillus from human tubercle bacilli failed. Later, a non-virulent strain of tubercle bacillus was cultivated, which Friedmann injected first into himself, then into tuberculous adults, and finally into healthy children, without any permanent ill effects. No detailed account was given of the cultivation or characteristics of the bacillus in question, and it is to be hoped that this important point will soon be elucidated by Friedmann. In the course of the discussion on his paper, it was pointed out by the Chairman (Dr. Orth) that, for want of time, he had asked Friedmann to confine himself to the salient features of his treatment. We may, therefore, hope that further accounts of the bacillus, with special reference to its cultural features, will soon be forthcoming.

Effect of the Vaccine.

The vaccine, which has been administered to more than one thousand persons, is, according to Friedmann, perfectly harmless, whether it be given by the mouth, by intravenous or intramuscular injection, by conjunctival instillation, or by direct application to open tuberculous foci. The intramuscular and the intravenous routes have been most often followed, and one to three or more intramuscular injections are necessary in each case. Success or failure depends on the absorption of the vaccine. It causes a swelling varying from the size of a nut to that of a small apple at the site of the injection. Improvement begins during the absorption of this swelling, and is most rapid after it has disappeared. Should the swelling persist for weeks and even months, or should it break down and suppurate, improvement is sometimes arrested. In such cases a second injection is useless, as it only induces another abscess. It is a pity that Friedmann does not state the proportion of cases in which this failure occurred, but this omission is of less importance as the failures were largely reduced in number by changing the method of administration. Statistics embracing the early experiments would not, therefore, give a true picture of the results to be expected of the vaccine. It was found in cases of advanced tuberculosis of the lungs and bones which usually react but slightly, or not at all, to von Pirquet's test, that the first injection was always quickly and completely absorbed without much swelling at the site of inoculation. The second and third injections, however, caused large swellings. When von Pirquet's test was markedly positive and the disease advanced, no complete recovery could be expected after subcutaneous or intramuscular injections alone.

The immediate effects of a large intravenous injection appear to be fever and lassitude, which quickly pass off. Old cases of lupus showed immediate and striking improvement, which continued up to a certain point, when it ceased abruptly. An intravenous injection altered the reaction of the tissues to subcutaneous or intramuscular injections. They were rapidly absorbed without that local infiltration which seems to be necessary for healing. This drawback was turned to good account in those cases in which the swellings suppurated or failed to disappear.

Pulmonary Tuberculosis.

The vaccine was administered in 250 cases of pulmonary tuberculosis. After the local swelling, caused by the injection, had subsided, marked improvement followed in all but the most advanced cases. With these exceptions the results were most striking. Night sweats were the first symptoms to disappear. The temperature fell, and anorexia, lassitude, headache, dyspnoea, and pain in the chest vanished. Weight was gained, although the treatment was often ambulatory, and in no case was a patient incapacitated for work by the treatment. Many who had been invalided for several months returned to their work a few weeks after one injection. With the diminution of expectoration and cough, the physical signs of disease grew less. Recovery was also effected in a few cases of advanced laryngeal and intestinal disease complicating pulmonary tuberculosis.

In no case of pulmonary consumption was any injurious effect observed. The "normal coefficient of improvement" in pulmonary tuberculosis must, however, be taken into consideration as we read of the improvements which follow an injection. Arrest of the disease in its early stages is such a common result of any or no treatment, that a larger material observed over a longer period is necessary before the claims of the vaccine to a specific action on pulmonary tuberculosis can be made good.

Some patients in the last stages of the disease recovered in a striking manner. One suffered from extensive and active disease of the lungs and larynx. Tuberculin had aggravated the disease, and he had been totally incapacitated for five months. After three injections the patient improved rapidly, the disease appeared to be everywhere arrested, and for the past eleven months he had worked uninterruptedly for twelve hours a day. Another patient was demonstrated who had made a good recovery after suffering from night sweats, haemoptysis, and violent diarrhoea, which had lasted for six weeks. On the other hand, six patients suffering from advanced pulmonary tuberculosis and intestinal ulceration had died after a temporary improvement. Intramuscular injections evoked neither a focal reaction nor haemoptysis—an advantage which cannot be claimed for tuberculin.

Genito-Urinary Tuberculosis.

Eleven cases of urino-genital tuberculosis were treated.

One patient suffered from fistulous epididymitis. After five injections the fistulae were healed, and the painful swelling was reduced to a small, painless nodule.

Another patient suffered from persistent suppuration after the amputation of a tuberculous testicle. The remaining testicle became involved and fistulous, but the parents refused amputation. Two injections were followed first by increased suppuration and then by complete recovery.

One patient suffered from vesical tenesmus and renal colic, as well as pulmonary tuberculosis. After four injections weight was gained, expectoration ceased, and the urino-genital symptoms disappeared.

A young girl who suffered from tuberculosis of both kidneys and ulceration of the bladder, was given four injections, after which renal colic ceased, and the ulcers in the bladder were seen through the cystoscope to have healed.

Another case of tuberculosis involving the kidneys, the left ureter, the bladder, and the lungs showed marked improvement after two injections.

Surgical Tuberculosis.

Marked benefit is reported to have followed the treatment in all forms of surgical tuberculosis. Of 12 cases of tuberculosis of the bones complicated by fistulae, 9 were cured. Of the three failures, one was a moribund patient suffering from complete disorganization of the pelvis, peritonitis, and advanced amyloid disease, and two were 75 years old.

One young patient suffered from fungous disease of the knee, the circumference of which was 4 cm. greater than that of its fellow. There were six deep fistulae, and the vaccine was given as the only alternative to amputation. After two injections all the fistulae disappeared, leaving the knee painless, smooth, and no larger than its fellow.

Another patient, a girl aged 8, suffered from severe tuberculosis of both lungs, glandular enlargement, and fungous tuberculosis of the knee, which had been immovable for four months. Six days after a combined intravenous and intra-

muscular injection she began to walk, and in the course of five weeks the circumference of the knee had diminished by 3 cm. The glandular swelling diminished, and the pulmonary disease showed marked improvement.

Another child, whose elbow joint had been operated on for tuberculous disease, developed three fistulae at the site of the operation, which was painful and cyanosed. After one injection complete recovery took place in six weeks, and no relapse had occurred fifteen months later.

All the cures have so far been permanent, and thus differ from the temporary improvement sometimes observed in fistulae which cease discharging and become covered by livid, painful and oedematous tissues. Over 30 cases of tuberculous glands were treated with great success.

Conjunctivitis, Lupus, etc.

The various manifestations of scrofula, including conjunctivitis, phlyctenules, keratitis, and eczema, quickly disappeared; many tuberculous skin diseases were refractory, and success was often not attained till the combined method of injection had been adopted. Other obscure manifestations of tuberculosis, including articular rheumatism and sciatica, improved in an astonishing manner after a few injections.

A case of lupus of the axilla which had lasted for fourteen years yielded in a striking manner to the treatment, and in another case of lupus involving the larynx, palate, and pharynx, the improvement a few weeks after one injection was most pronounced. Recovery was effected in the case of a woman whose eczema of the hands and feet had proved refractory for twenty-four years to various methods.

Prophylactic Injections.

Prophylactic injections were given to 335 children, whose ages ranged from a few hours to 3 years. Only one intramuscular injection was given in each case. Von Pirquet's test was almost invariably carried out, and was found positive in about 2 per cent. of the new-born. Ninety per cent. of the mothers gave a positive reaction. Although in many cases over a year had elapsed since the vaccination, not one child had shown any sign of scrofula or tuberculosis, yet they were mainly recruited from tuberculous families.

In cases of twins, only one was vaccinated, in order that the other might act as a control. The injections caused neither fever nor any other symptom, but were followed in a few days by a swelling from the size of a pea to that of a cherry, which disappeared in the course of a few weeks. While it lasted von Pirquet's test was positive, but after its absorption the test was negative.

This inoculation of living tubercle bacilli into healthy children seems, at first sight, an heroic measure. Friedmann and his colleagues have evidently convinced themselves of its harmlessness, and they adopted it only after they had familiarized themselves with the action of the bacilli on many tuberculous individuals. But it is a far cry from the vaccination of tuberculous individuals to the injection of healthy children with living bacilli whose ultimate non-virulence must be taken on trust, even by those most familiar with their present characteristics. The changes in virulence which one and the same strain of germ may show in the course of cultivation are well known, and we may instance the experience of Pasteur, who successfully inoculated hens with a vaccine containing living cholera germs. After a time, however, the vaccine became highly virulent and infectious, and the cause of a serious epidemic among the hens.

Friedmann reports some interesting experiments made with his vaccine on guinea-pigs. He found that not only were these animals immune to doses several times larger than those given to man, but that the bacilli disappeared altogether soon after the injection, the animals being perfectly healthy when killed more than a year later. Guinea-pigs infected with virulent tuberculosis usually die about 110 days later, but if a single injection of the vaccine were given, the average length of the tuberculous guinea-pig's life was prolonged to 363 days. If the vaccine were administered before virulent human tubercle bacilli were injected, the guinea-pig lived four times as long as the control non-vaccinated guinea-pig, also infected with virulent tubercle bacilli.

These results are not altogether satisfactory, as the chairman pointed out in the course of the discussion which followed, but experiments on animals as sensitive to the human tubercle bacillus as the guinea-pig cannot be applied to man without qualification.

Several of those who took part in the discussion recorded their experience of the vaccine and demonstrated cases. The consensus of opinion was markedly, even enthusiastically, in favour of the vaccine. Of the speakers who had practical experience of the vaccine, only one (Professor Blaschko) sounded a note of reserve as to its action on cutaneous tuberculosis. His failures he attributed to hypersensitiveness of the skin, which he hoped in the future to lessen by the method of simultaneous injection. Even this speaker, however, reported a case of combined cutaneous and subcutaneous tuberculosis of the hand which reacted satisfactorily to the vaccine after other forms of treatment, including tuberculin, *x* rays, pyrogallol preparations, and amputation of one finger, had failed to arrest the disease. Another speaker (Dr. Karfunkel) gave an account of 450 patients treated. More than 200 of these were phthisical; all benefited, some to a striking extent. Of 47 patients suffering from scrofula, all were cured, although many had been treated for years in vain by other methods. Of 22 patients with corneal ulcer, conjunctivitis, blepharitis, or phlyctenules, all were cured in a few weeks; yet in several cases the disease had lasted for years. The speaker's confidence in the treatment is shown by his prescribing it for his 6-year-old son, who was subject to attacks of bronchitis with fever which were traced to tuberculous enlargement of the bronchial glands. The injection was immediately followed by febrile bronchitis, lasting for four days; the attacks had not afterwards recurred.

These results seem excellent, but so many methods, now relegated to the rubbish heap, have also been hailed with indiscriminating enthusiasm that we cannot at present unreservedly accept the claims made for Friedmann's vaccine.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

ON November 28th the examination of Mr. J. C. Umney, of the firm of Messrs. Wright, Layman, and Umney, Limited, who attended on behalf of the Proprietary Articles Section of the London Chamber of Commerce, was continued.

The witness said that he had written out two prescriptions which he suggested the Committee should have analysed by a private analyst and by the Government analyst; it would then be apparent how near or how far from the truth expert analysts succeeded in getting.

The Chairman thanked the witness, but said that the Committee was not prepared to go into a "competition performance" at that stage.

Dr. Lynch asked the witness whether he agreed that there were proprietary preparations which were sheer frauds. Mr. Umney replied that he would not say they were "sheer frauds," but some had not the merits of others. In reply to further questions, he said he did not think it would be impossible for an analyst of high skill, using every possible means, to detect all the constituents in a medicine. He could give eight or ten instances in which, to his own knowledge, the analyses in *Secret Remedies* were incorrect.

In support of the statement that valuable medicines had been at first regarded as the outcome of quackery, the witness mentioned ipecacuanha. During the reign of Louis XIV of France, Helvetius, the son of a Dutch quack, experimented with ipecacuanha, and had considerable success in treating cases of dysentery. The Dauphin was taken with that disease, and the Court physicians failing to cure him the quack was called in, and on administering the new drug effected a cure.

Dr. Lynch asked whether any proprietor of a secret remedy had made a valuable discovery or done anything more than turn to advantage the discoveries of other people.

The witness replied that the discovery of the correct combinations of various drugs was of value.

Dr. Lynch: What of the idiosyncrasies of the patient? Does not the physician in a great number of cases vary his prescription to meet the requirements of individual cases?—The Witness: He may, but not very often.

Yet the maker of a proprietary remedy has only one formula which he offers to all the world regardless of individual idiosyncrasies?—I do not deny the uses of diagnosis, and it is always open to people to consult a doctor as to whether a proprietary medicine will do them good or not.

In further examination the witness expressed the opinion that medicines which claimed to cure cancer, phthisis, diabetes, etc., should not be offered to the public. These diseases should not be handled otherwise than through the medical profession. Such a list of diseases must be open to revision from time to time as knowledge advanced. He thought the present law was quite capable of dealing with advertisements which were intended to deceive and defraud the public.

The Acting Chairman (Sir Philip Magnus): The Committee has had evidence that it is almost impossible for a person to obtain redress under the present law.—The Witness: There is no objection to an extension of the law if it is not possible now.

In reply to questions by Sir Henry Norman as to the provisions of the American law, the witness said there was nothing in the clauses as to misbranding which was not covered by the existing law in this country. In the United States it was necessary to state the presence of certain ingredients on the label, and that requirement corresponded to the pharmacy laws of this country, by which any poison could be added to the list without fresh legislation.

The Chairman (Sir Henry Norman) asked the witness whether, having regard to his high technical knowledge and scientific distinction, and to the fact that none of the preparations of his firm had been the object of hostile analysis, he was a fair representative of the proprietary medicine industry. Mr. Umney replied that he was not representing the whole of the owners of proprietary articles mentioned in *Secret Remedies*, because he had not heard of four-fifths of them.

The Chairman: But are you, so far as a large part of the proprietary medicine business is concerned, a fair representative?—Mr. Umney: I hope I am not (laughter).

Dr. Chapple asked: Supposing it were possible to abolish all proprietary medicines to-morrow, who would suffer most?—The Witness: The medical profession would benefit the most.

I am coming to that. Who would suffer most?—The public.

Do you really suggest that if proprietary medicines were abolished people would go to a doctor?—A good many would, especially when the insurance benefits come into operation.

I suggest to you that it is better for a person suffering from a malady to go to a chemist who, if it is anything more than a simple ailment, will refer him to a doctor, than for that person to read an imaginative advertisement and take the advertised mixture.—You must not assume that everyone who reads the advertisements of proprietary medicines is a fool.

Sir Philip Magnus: You take an optimistic view. (Laughter.)

The witness further expressed the opinion that doctors would be consulted very much more than they were at present if proprietary medicines did not exist, because these preparations now cured so many people that doctors did not get a chance.

In reply to Mr. Bathurst, the witness agreed that the reputable vendors of proprietary medicines would not suffer, and at the same time the public would receive more protection than it had at present, if the law were strengthened. He thought the suggestions of the Proprietary Articles Section of the Chamber of Commerce if adopted would meet the wishes of every one.

THE annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Hotel Cecil, Strand, on January 31st, 1913.

THE new Wolseley autocar catalogue contains very full information as to the three chassis models on which this company intends to concentrate all its energies during the coming year. It is well arranged, and enables the reader to ascertain with precision the cost of any one of the three chassis as ordinarily fitted with body, hood and screen, as also with any modification of body structure which an individual purchaser may desire.

BRITISH RED CROSS SOCIETY.

WORK IN THE BALKANS.

THE British Red Cross Mission at the seat of war is now represented by a personnel of 213, made up as follows:

3	Directors (1 for Turkey, 1 for Greece, 1 for North Balkan States).
34	Medical officers.
35	Dressers.
1	X-ray operator.
9	Sergeants.
2	Clerks.
5	Cooks.
118	Orderlies.
6	Trained female nurses.

This list does not include interpreters, cooks, batmen, transport men, and other helpers engaged locally.

The first European Red Cross party to reach the seat of war was the British Red Cross Unit for Montenegro. This party, under Dr. Bradford, is established at Antivara, the seaport town of Montenegro. Here a base hospital was started on October 20th in a disused tobacco factory. This hospital is quite full, and during the armistice more wounded will arrive. Over 500 patients have already been dealt with. It is to this hospital that the six nurses mentioned above are attached. In addition to the hospital, dressing stations have been established at Rjeka, St. Nikola, and San Giovanni di Manua. Owing to the bad state of the roads most of the wounded arrive by water and the wounds are septic.

The Servian units of the society were last heard of at Uskub where a great many wounded had accumulated. These units had proceeded straight to the front on arrival. The Bulgarian units are also at the front, and are at the moment out of reach of communication. They were last heard of at Kirk Kilissi, but they have probably pushed forward with the advancing column. It is evident that they have had their hands more than full.

The Greek units of the society are in Salonica, which town they entered immediately after its capitulation. They are established in a derelict Turkish hospital, and have had a great mass of sick and wounded to deal with. This hospital is designed for 250 patients, but at the date of the last report (November 22nd) it contained 585 sick and wounded. The extra patients were lying in the passages, on the landings, and in the wall spaces. A Rest Camp is being established for such patients as are only suffering from exhaustion and starvation. The weather is unfavourable and, indeed, severe. The Duchess of Sparta applied to the society to send out six female nurses at Her Royal Highness's expense. These nurses, at first stationed at Athens, are now at Salonica, where they are doing excellent work.

The Red Cross Mission to Turkey has been much occupied. Its base hospital is in the Fine Art School at Constantinople on Seraglio Point. Minor hospitals for the sick have been established near the Chatalja lines. There has been much cholera and much dysentery, but the cholera is rapidly declining, and there is every hope that the epidemic is now practically over. Among the Red Cross staff at Constantinople is an officer of the Indian Medical Service who has had a large experience of cholera, together with a bacteriologist especially versed in tropical diseases. An ample supply of Turkish-speaking female nurses has been obtained locally.

According to telegrams from the various centres, no more personnel is at the moment required. Very large Red Cross expeditions have been sent out by Italy, France, Germany, Austria, and Russia.

Ladies inquiring at the society's office are surprised to be informed that none of the belligerents have made application for English nurses. The reason, however, is obvious. An ample supply of well trained hospital nurses is to be obtained much nearer at hand, namely, in Italy, Austria, and Germany. Nurses, indeed, are more easily obtained and at less cost from Southern France and Russia than from England. From Russia a large number of nurses have come in connexion with the Greek Church. The appeals that have reached the society have been for doctors and orderlies arranged in self-contained mobile units. These demands have been supplied by the British Red Cross Society and the other Red Cross Societies of Europe. If the military position remains unchanged no more personnel will be sent out.

The British Red Cross Society has dispatched to the seat of war, up to the present date, over 30 tons of medical and surgical supplies, together with 7 tons of food suitable for the sick, and not to be obtained locally. From every side most gratifying reports have been received of the work done by the English surgeons and their staffs.

THE INTERNATIONAL OPIUM CONFERENCE.

THE REPORT OF THE BRITISH DELEGATES.

A PARLIAMENTARY paper has just been laid on the table of the House containing the report of the British delegates to the International Opium Conference, which sat at The Hague in December, 1911, and January, 1912. Readers of the JOURNAL have already been informed in regard to the terms of the International Convention, which was drawn up by the Conference, and also as to the proceedings of the Conference during its numerous sessions.[1] The report just published, however, gives further light into the inner workings of the Conference, and sums up, from the British point of view, the achievements of the plenipotentiaries. It extends over twenty-seven pages, and is followed by three appendices dealing especially with administrative measures in India and the British Colonies in regard to opium and its derivatives. The report is signed by all the four British delegates—namely, Sir Cecil Clementi Smith, Sir William Meyer, Mr. Max Müller, and Sir William Collins. The chief points brought out by this document relate to measures in respect to the control of morphine, cocaine, and certain other alkaloids liable to become the occasion of addiction, and to the prominent part played by the British delegation in securing the incorporation of these measures in the Convention.

It appears that the task of the British plenipotentiaries did not prove altogether easy. They approached this portion of their labours with some apprehension. They say:

> Opposition to action on these lines was only to be anticipated and since Germany has a practical monopoly of cocaine production, and claimed to have a satisfactory system of domestic control, her delegates were reluctant to embark on further measures which might sacrifice a lucrative German industry for the benefit of outside countries not represented at the conference. Their contention was that foreign countries should look after themselves by tightening their systems of police and customs control or by some similar measures.

We have reason to believe that while this is true of cocaine in regard to Germany, in the case of morphine there are large quantities manufactured both in Scotland and England, and a lucrative export trade exists in this country at any rate in respect of morphine and its sub-derivatives. The British delegates were therefore urging what amounted in some respects to a self-denying ordinance. They held that "it was essential that producing countries should co-operate to make the pernicious contraband traffic which had sprung up as difficult as possible," and that co-operation between the countries of origin and the importing countries is absolutely indispensable. To this end it appears that before going into the plenary session of the Conference the British and German delegates met, and in a cordial spirit agreed upon certain draft articles having for their object the control of the manufacture, sale, import, and export of morphine, cocaine, and their respective salts, medicinal opium, and all preparations containing more than 0.2 per cent. of morphine or 0.1 per cent. of cocaine. The resolutions containing these agreed articles were then submitted to the full conference by Sir Cecil Smith, who stated that the British Government "regarded this matter as so important that they decided not to take part in this conference unless the other Powers also accepted its special urgency." This speech "was vigorously supported by Dr. Wu-Lien-Teu, of the Chinese delegation, who gave a vivid picture of the harm done by morphine and cocaine in China; and later on Sir William Collins emphasized the divergences between the small quantities of opium and morphine required for bona fide medical purposes and the relatively large amounts produced." The resolutions were adopted by the Conference, and, together with others dealing with crude opium and prepared opium used for smoking, had all been passed before the delegates rose for the Christmas recess on December 22nd, 1911. As the report puts it:

> We had, in fact, as one of the French delegates epigrammatically remarked, painted in our picture, and what principally remained to be done was to deal with the best manner of framing it.

After Christmas there appears to have been a serious change of front. The delegates say:

> "When, however, we assembled on January 8th we were confronted by a very different state of things. Owing to certain new proposals which had been put forward on behalf of the German delegation, the Drafting Committee had found itself confronted with questions of substance" not only in regard to the effectuating clauses of the treaty but also in regard to the morphine and cocaine articles already passed.

We learn that "the German delegation, as a result of the conferences they had had with their Government in Berlin, were now desirous of introducing important modifications." The three British plenipotentiaries—for Sir Cecil Smith did not return to The Hague after Christmas—appear to have been placed in a position of great delicacy, necessitating no little diplomatic skill in order to make good the strong position taken by their Government from the first in regard to morphine and cocaine, and at the same time to bring the German delegation into line. It will be remembered that at that time Germany was in the throes of a general election, and we can well understand some hesitation on the part of the authorities in pressing at that juncture for any new and vexatious trade restrictions on an important industry. The German delegates had learnt at Berlin that "the categorical form in which the original articles were drawn up was not suited to the constitution and conditions of the empire," since the matters dealt with "were for the most part within the sphere not of the Imperial Government or Legislature, but of the individual States." A similar objection, we imagine, might have been urged on the part of the Federal Government of the United States, but no such plea was advanced by the American delegates. Further pourparlers ensued between the British and German representatives, and instructions were sought from home. The British Government replied deprecating the German amendments as diminishing the utility of the Convention, but discretion was given to their three delegates to negotiate, and reluctant authorization was given to agree if unanimity could only be thereby obtained. A compromise was eventually reached. By Article 9 the Powers pledge themselves to limit by law or regulation the manufacture, sale, and use of the drugs in question to medical and legitimate purposes only and to co-operate in order to prevent their use for other objects. Since the drugs in question include all preparations containing more than 0.2 per cent. of morphine or more than 0.1 per cent. of cocaine (Article XIV), this seems to be as stringent a control as we could have anticipated, although some of the subordinate articles appear to have been somewhat weakened in force by the German delegation's later proposals. The report, in summing up the results, says:

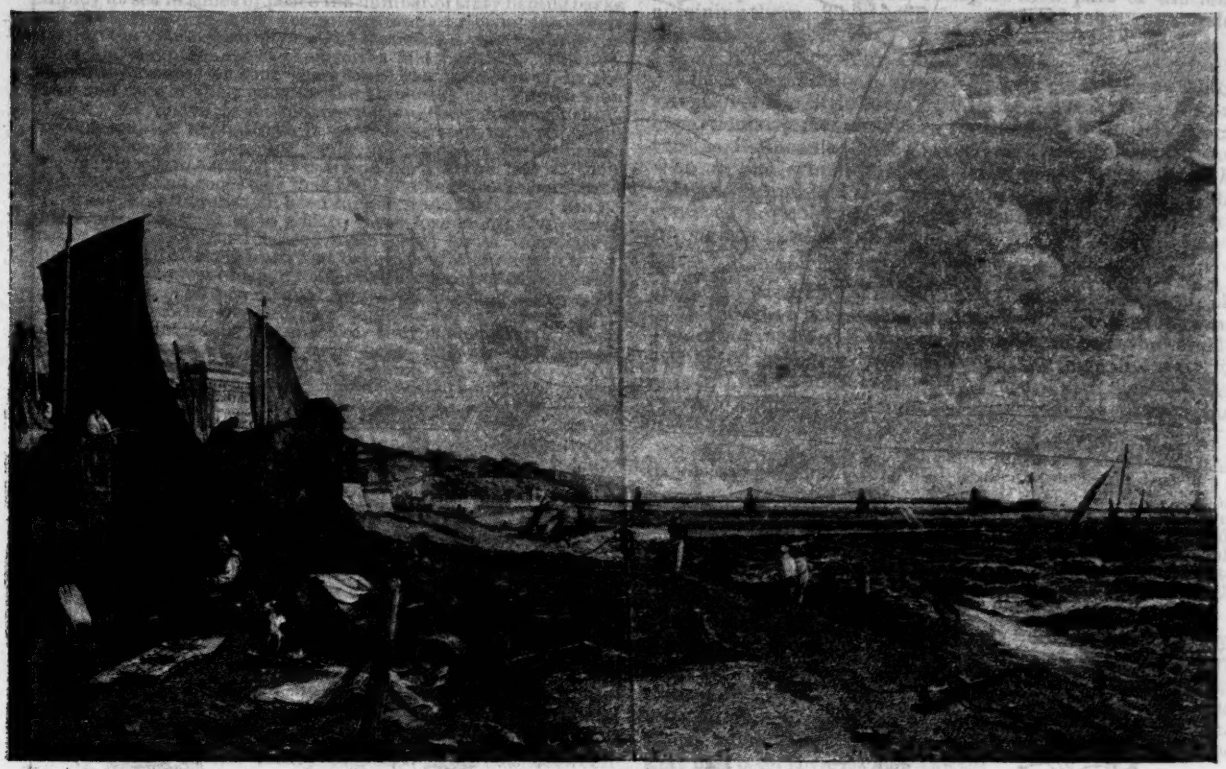
> The acceptance of restrictive measures in regard to morphine and cocaine stands to the credit of the British Government. . . . As matters now stand . . . the fact will remain that the convention has marked an important step in international ethics. . . . No Power which has participated in the conference, for example, can hereafter maintain that its obligations cease with adequate protection of its own subjects from noxious drugs; it is also pledged to help its neighbours as far as may be practicable towards the same end.

This is indeed a movement in advance, and the British Government, as well as their representatives, may be warmly congratulated upon having, in spite of difficulties, secured it.

[1] BRITISH MEDICAL JOURNAL, February 3rd, August 31st, and September 14th, 1912.

A NEW catalogue has been issued by Messrs. Siemens Brothers, giving details of a clinical outfit by means of which a continuous record of the temperature of patients can be obtained, it is stated, without disturbing them, even when they are asleep.

LORD EMMOTT, Parliamentary Under-Secretary of State for the Colonies, has appointed Mr. H. R. Cowell, B.A., of the Colonial Office, to be his private secretary, in place of Mr. W. C. Bottomley, B.A., who has resigned the appointment on promotion. Sir John Anderson, Permanent Under-Secretary of State for the Colonies, has appointed Mr. A. B. Keith, D.C.L., of the Colonial Office, to be his private secretary, in place of Mr. Cowell.



BRIGHTON ABOUT 1829.
[From a print of a picture by Constable.]

EIGHTY-FIRST ANNUAL MEETING
OF THE
British Medical Association,
BRIGHTON, JULY, 1913.

THE Eighty-first Annual Meeting of the British Medical Association will be held at Brighton next July. The President-elect, Dr. W. Ainslie Hollis, Consulting Physician to the Sussex County Hospital, will deliver his address on the evening of July 22nd, and the sectional meetings will be held on the three following days. As at present arranged there will be fifteen sections.

The Annual Representative Meeting will commence on Friday morning, July 18th, and the conference and dinner of the honorary secretaries of Divisions and Branches will be held on the previous afternoon and evening.

Brighton has during the last century grown very rapidly, and is now not only a seaside resort frequented by a very large number of visitors from London and the Midlands, both in winter and in summer, but is also the chief commercial town of South-Eastern England. With its sister borough of Hove, and its suburb of Kemp Town it extends for many miles along the coast and within recent years has also spread inland on to the slopes of the Downs, where many private residences have been erected. In addition to the gardens on the sea front it has many public parks, including Preston Park and Queen's Park. It is, of course, well provided with hotels and lodging-houses, and railway communications are excellent both with London and by through trains with the Midlands.

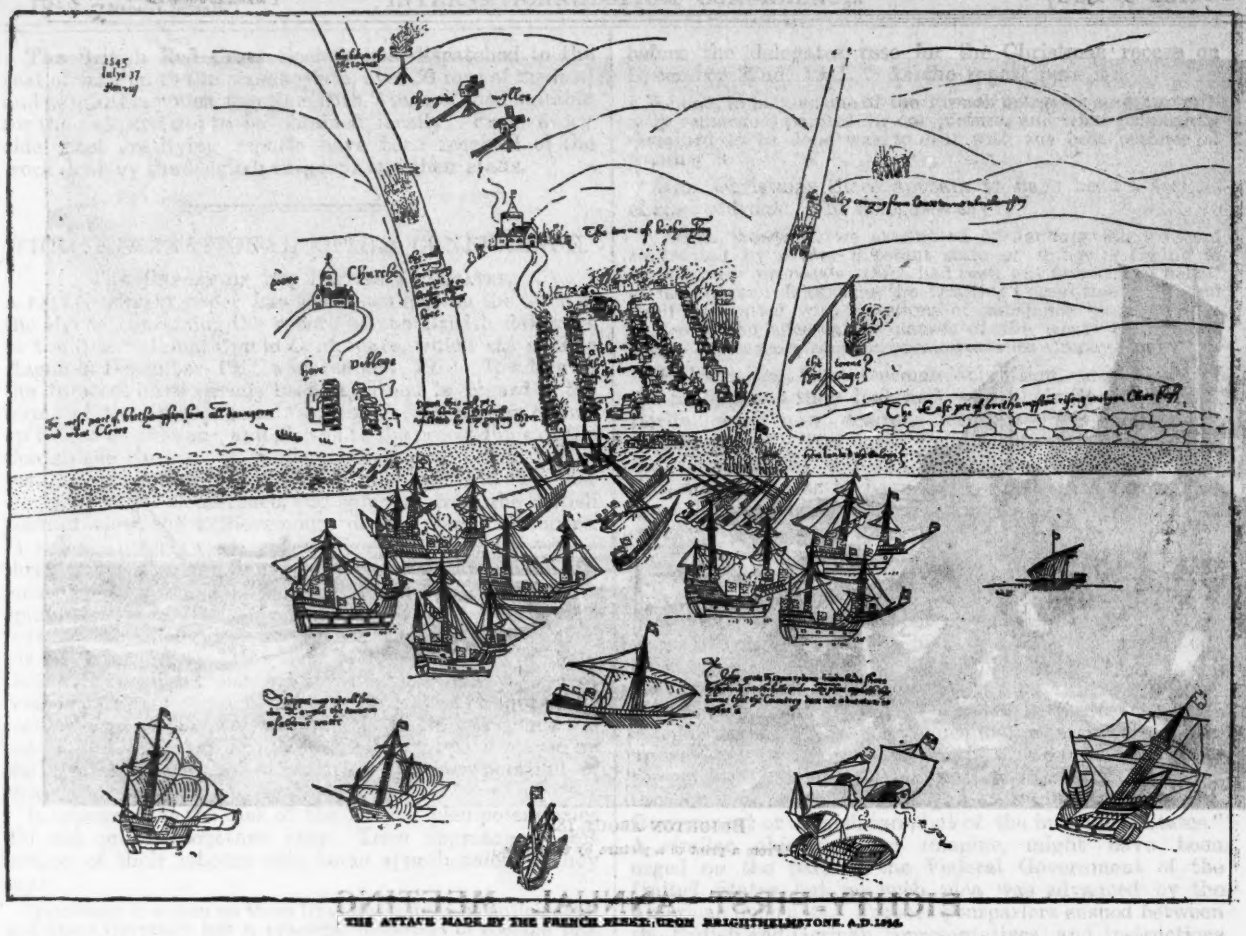
HISTORY OF BRIGHTON.

Brighton was known to Dr. Johnson as "Brighthelmstone," but almost a century before his day the name was sometimes shortened to its present form. The earliest mention of it is in Domesday Book, where it appears as "Bristelmestune"; in ancient documents it is variously written in that way, and as Bredhamston, Brighthelmsted, Brighelmsted, Brighamstun. A Sussex archaeologist has found no fewer than forty-five different spellings of the name. It would seem that Brighton was a place of some importance in the time of the Roman occupation, as about 1750 an urn was dug up in the neighbourhood of the town in which were a thousand denarii of different impresses from Antoninus Pius in the second to Philip in the third century. Later ashes and fragments of human bones were found enclosed in urns of Roman manufacture in some of the barrows near the town.[1]

Horsfield[2] discusses the derivation of the name, but comes to no satisfactory conclusion. He thinks, however, that the most probable explanation is that the town "took its name from that of some considerable person to whom it belonged, Brighthelm, and the Saxon *tun*, a dwelling." But who was Brighthelm? Hare says he was a

[1] *Ancient and Modern History of Lewes and Brighthelmstone, in which are compressed the most interesting events of the County at large under the Regnian, Roman, Saxon, and Norman Settlements.* Lewes: Printed for W. Lee, the Editor and Proprietor, and may be had of Messrs. Rivington, St. Paul's Churchyard, London. 1795.

[2] *The History, Antiquities, and Topography of the County of Sussex.* By Thomas Walker Horsfield, F.S.A. Published by Baxter, Sussex Press, Lewes; and Messrs. Nichols and Son, Parliament Street, London. 1835.



THE ATTACK MADE BY THE FRENCH FLEET UPON BRIGHTHELMSTONE, A.D. 1545.

[From a print in Horsfield's *History of Sussex*. Photographed by Donald Macbeth.]

Bishop of Selsey. An author already referred to[3] conjectures that Brighton may have suffered from the ravages of the Saxon invaders in the middle of the fifth century, and that the place fell to the lot of a leader named Brighthelm. He is inclined to think that most of the town and parish had belonged to the ancestors of Earl Godwine for many generations before the Conquest. They were Thanes of great possessions, but there is no record of them before Ulnoth, the father of Godwine. That there is some truth in this conjecture may, perhaps, be inferred from the fact that Harold, the son of Godwine, and afterwards King of England, succeeded his father in the lordship of two of the chief manors of Brighthelmston. After the Conquest it fell into the hands of William, and in Domesday Book it is described as one of the many lordships in the Rape of Lewes granted by the Conqueror to his son-in-law, William de Warrenne. Lee says that from the surnames of some of the most ancient families in the town, and from the speech and peculiar customs of the old natives, it has been conjectured that at some period, not long after the Conquest, a colony of Flemings had sought refuge from an inundation in their own country and settled at Brighthelmston. This conjecture, perhaps, receives some support from the fact that Matilda, Queen of William the Conqueror, was the daughter of Baldwin, Earl of Flanders, and may have induced her son-in-law to give shelter to her countrymen. Naturally fishing was the chief industry of the inhabitants in these early days; as early as 1086 they paid a rent of four thousand herrings to the Manor of Brighthelmston, and they also cured large quantities of herrings, and it is said that besides supplying inland places in England, they had an export trade with the Continent.[4] This is not improbable, as the consumption of fish, owing to the observance of Lent and other fasts, was very large. The inhabitants, as is usual at seaside places, were divided into landsmen and seamen, the former living on the cliff, the latter, who largely preponderated in number, in two streets under it.

[3] W. Lee, op. cit.
[4] Lee, loc. cit.

About the middle of the twelfth century part of Brighthelmston belonged to Lewes Priory, and it has been said that "this resigning the town into the hands of the monks was a fatal stroke to its ancient greatness." According to Horsfield, however, there is no shadow of evidence that Brighthelmston was anything but a small fishing village till the middle of the eighteenth century, when it began to acquire fame as a watering place. Till then there was a proverb, "Proud Lewes and poor Brighthelmston," which shows that Brighton was an inconsiderable place. It was never included among the Cinque Ports, which is a sufficient proof that its "ancient greatness" is a myth. In 1285 it had a separate constable. In 1313 John de Warren obtained a charter for a weekly market. In 1515 it was described by Hall as "a poore village in Sussex called Bright Helmston."

Throughout the reign of Queen Elizabeth it was a fairly thriving little place, and its prosperity was further increased by the addition to its population of a number of Huguenots who sought refuge there after the massacre of St. Bartholomew's. The place became sufficiently important for the appointment of commissioners by the Privy Council to adjust old-standing disputes between the seamen and the landsmen; the commission was executed to the satisfaction of all parties in 1580. The commissioners found that from time immemorial the place had been governed by two head boroughs sitting in the borough Court and assisted by a council called The Twelve. This constitution existed till 1772, when commissioners were appointed. During the reigns of James I and Charles I, the Brighthelmston fishery suffered severely from the competition of the Dutch, from foreign aggression, and from the disturbed state of the political atmosphere. The distress of the inhabitants is vividly set forth in the following petition addressed by them to Parliament:[5]

The petition of the poor distressed and much decayed fishing town of Brighthelmstone in Sussex, in most humble manner complaining, sheweth unto you, honourable and worthy assembly,

[5] Harleian MSS. in British Museum. Quoted by Horsfield, op. cit.

in former time, of long continuance, they were wont to have and employ at sea in times of peace the number of sixty fishing barks and boats which in some years were wont to bring into their town to the value of seven or eight thousand a year towards the relief and maintenance of themselves and families. But now within these three or four years since the time of war, by the force and rage of their enemies the Dunkerks and French men of war, they have been debarred from their former fishing voyages and the sea hath, as it were, been shut up from them so that they have not, nor could not go about their former affairs; but were exposed to extreme peril of the loss of their lives, liberty and goods; so that they had kept from their trade of fishing, and thereby had been hindered to the value of thirty-thousand pounds. And to add to these former hindrance and loss of time, they had received main great losses; fourteen of the best barks of their town had been taken and carried away by the enemy, most of them loaden with merchandize the price of worth thereof will equalize if not surmount the former sum; besides, many other of their poor neighbours have been chased ashore and pillaged by them. Yea, they have taken some of them not two leagues from their town, and have stript and taken from them that little parcel which they had; and now they are so encouraged against them and without help by aid of any ship by sea that they dared not go to sea to take any kind of fish or pass from port to port; but were in continual fear that one time or other they will land, break in upon them, and deprive them of their lives and liberties if some speedy course was not taken for relief herein. And, praying the house to take into their Christian and judicial consideration their most miserable and distressed state, and speedily to suffer and defend the coast with some of His Majesty's ships of war: and also to appoint some of them again the 1st of April next, for to defend their poor fishermen in their fishing voyages; and therein they should maintain the mariners a good part of the strength of this part of this Kingdom, or otherwise the sea coast would be wholly forsaken by seamen and left a forlorne and easy prey to the enemy which God of His great mercy defend!

The petition is signed by Joseph Rivett (Minister) and sixteen others. There is no date, but, according to Horsfield, internal evidence points to 1666, just before the conclusion of the treaty of peace at Breda between England and her three enemies, the French, the Dutch, and the Danes. The distress of the inhabitants continued and became so acute that in 1689 an order of Sessions for compelling the parishes of Bletchington, Haughton, Ovingdean, and Patcham, which had very few or no poor, to contribute to the payment of the poor of Brighton was issued.

Macaulay, in his *History of England*, Chapter III (State of England in 1685), gives the following account of the town:

> Brighton was described as a place which had once been thriving which had possessed many small fishing barques, and which had when at the height of prosperity contained above 2,000 inhabitants, but which was sinking fast into decay. The sea was gradually gaining on the buildings, which at length almost entirely disappeared. Ninety years ago [that is about 1758] the ruins of an old fort were to be seen lying among the pebbles and seaweed on the beach, and ancient men could still point out the traces of foundations on a spot where a street of more than a hundred huts had been swallowed up by the waves. So desolate was the place after this calamity that the vicarage was thought scarcely worth having. A few poor fishermen, however, still continued to dry their nets on those cliffs on which now a town more than twice as large and populous as the Bristol of the Stuarts presents mile after mile, its gay and fantastic front to the sea.

In the article on Brighthelmston in *Magna Britannica*, published in 1738, it is stated that about ninety years before—that is, about the middle of the seventeenth century—the town was a considerable place for fishing, with a population consisting of nearly 600 families, but that, since the commencement of the civil wars, it had much decayed owing to the causes set forth in the petition. "Nay," says the writer, "it is the opinion of the most judicious inhabitants that had not divine providence in a great measure protected them by their towns being built low and standing on a flat ground, the French would several times have quite demolished it, as they had attempted to do; but the low situation prevented their doing it any considerable damage, the cannon balls usually flying over the town. But the greatest damage to the buildings has been done by the breaking in of the sea."

Besides the depredations from foreign aggressors to which its position exposed it, Brighthelmston suffered much from the encroachments of the sea and from visitations of violent storms. Before 1665 the sea destroyed twenty-two copyhold tenements under the cliff. Among these were twelve shops with four stake places and four capstan places and three cottages, with part of the land adjoining them. There still remained 113 tenements under the cliff.

THE GREAT STORMS.

These were finally destroyed by two great storms which swept over the little town in 1703 and 1705. The former is particularly memorable to the student of English literature, as, if Macaulay's view is accepted, it furnished Addison with a line which made the fortune of his poem, *The Campaign*, and laid the foundation of whatever success he achieved in public life. In that poem he compared Marlborough in battle to an angel who

> Rides on the whirlwind and directs the storm.

Macaulay says the extraordinary effect which this simile produced when it first appeared, and which to the following generation seemed inexplicable, is doubtless to be chiefly attributed to a line ("Such as of late o'er pale Britannia pass'd") which most readers now regard as a feeble parenthesis. Addison, he points out, spoke not of a storm, but of *the* storm.

> The great tempest of 1703, the only tempest which in our latitude has equalled the rage of a tropical hurricane, had left a dreadful recollection in the minds of all men. Whole fleets had been cast away. Large mansions had been blown down. One prelate had been buried beneath the ruins of his palace. London and Bristol had presented the appearance of cities just sacked. Hundreds of families were still in mourning. The prostrate trunks of large trees and the ruins of houses still attested in all the southern counties the fury of the blast.

At Brighton the storm began about midnight on Saturday, October 27th, 1703, and continued for about eight hours with unbridled fury. Many houses were unroofed, others totally destroyed. The church leads were torn off and the two mills belonging to the town thrown down by the storm. Brighton had the ruinous appearance of a place that had been severely bombarded.

On August 12th, 1705, another terrific storm swept over the town, destroying a great many houses and blowing off most of the church leads. This storm wrecked all the lower buildings which had escaped the fury of former storms and inundations. Every dwelling under the cliff was destroyed and its very site hidden beneath a mound of beach.

On Monday, January 26th, 1795, Brighton was flooded as it never had been before. The inundation was caused by a sudden thaw with rain, which succeeded a frost of about a month's continuance. It melted the snow with which the ground was then covered so rapidly that the water ran in torrents from the circumjacent hills and completely deluged the Level, Castle Square, the Poole, and the Steyne to the depth of several feet.[6]

About 1713 the sea, which had destroyed everything below the cliff, began rapidly to encroach on the cliff itself. It was therefore found necessary to erect groynes to check the invasion of the beach by the onrushing waves.

In the Lansdown MSS., British Museum, are some topographical collections towards a History of Sussex made by John Warburton. He visited the coast at the beginning of the eighteenth century, and his remarks about Brighton show that he wrote very soon after the irruptions of the sea when ruins covered the beach.

> A good mile further [from Hove] going along the beach I arrived at Brighthemstead, a large ill-built irregular market town, mostly inhabited by seafaring men who choose their residence here as being situated on the main and convenient for their going on shore on their passing and repassing in the coasting trade. This town is likely to share the same fate with the last [which the writer describes as "a ruinous village called Hove which the sea is daily eating up. It is in a fair way of being quite deserted"], the sea having washed away the half of it; whole streets being now deserted and the beach almost covered with walls of houses being almost entire, the lime or cement being strong enough when thrown down to resist the violence of the waves. The church is situated on the downs at a furlong distance from the town; it is large, but nothing about it is worthy of remark or in the town; there not being any person of fortune in the town, but one Master's or Morley (?) a gentleman of good birth.

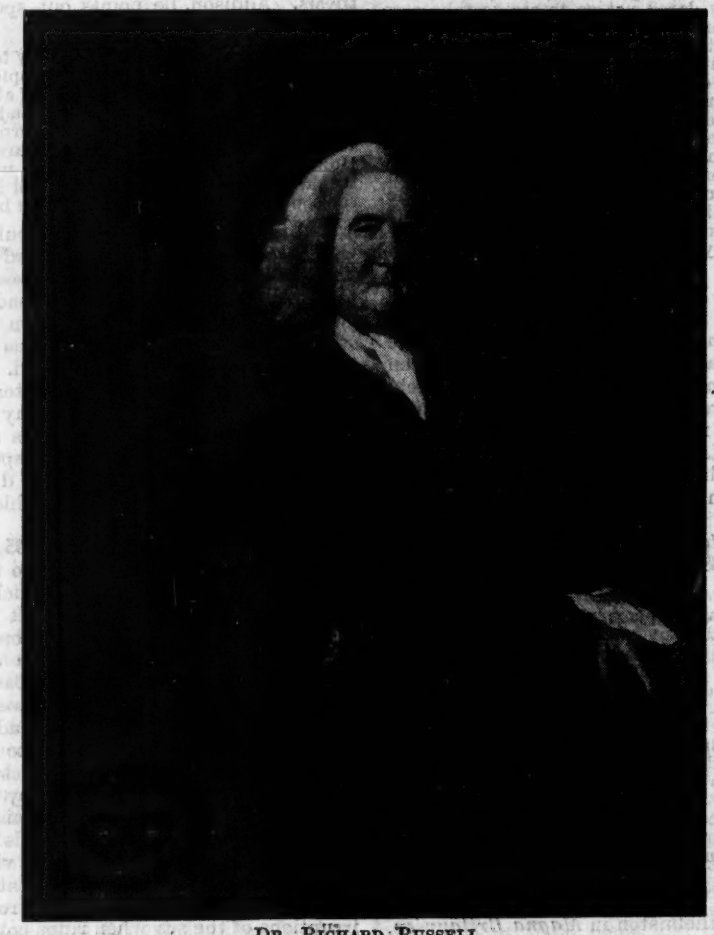
There would seem to be no doubt that at this time the town under the cliff was entirely demolished. Some portions were probably rescued and used for the construction of new houses, but a considerable part of the town was buried under the beach. In a few years scarcely a vestige of the old town could be traced, and the increasing

[6] Lee, op. cit.

mass of shingle was the only indication of the site of the "low and poor Bristelmestune." The walls of one of the streets that formerly stood under the cliff, called South Street, were discovered in 1818 by some labourers who were making excavations. These ruins were buried under a layer of beach more than 15 ft. thick. In a book entitled *A Tour Through the Island of Great Britain*, which appeared in 1724, there is the following description of Brighton. After giving a short account of Lewes, the writer proceeds:

From this town, following still the range of the south downs west, we ride in view of the sea and on a fine carpet ground for about 12 miles, to Bright Helmston, commonly called Bredhemston, a poor fishing town, old built, and on the very edge of the sea. Here again, as I mentioned at Folkestone and Dover, the fishermen having large barks go away to Yarmouth, on the coast of Norfolk, to the fishing fare there, and hire themselves for the season to catch herrings for the merchants; and they tell us that these make a very good business of it. The sea is very unkind to this town, and has by its continual encroachment so gained upon them that in a little time more they might reasonably expect it would eat up the whole town, above one hundred houses having been devoured by the water in a few years past. They are now obliged to get a brief granted them to beg money all over England, to raise banks against the water, the expence of which, the brief expressly says, will be £8,000, which, if one were to look on the town, would seem to be more than all the houses in it are worth.

Horsfield says that the "brief" here alluded to was obtained by virtue of Letters Patent under the Great Seal in 1722. The state of the town was very precarious. The portion of it under the cliffs had some years before been engulfed, and now the cliffs themselves with the buildings erected thereon were sapped by the advancing tide and immense masses fell every year into the sea. The erection of groins was determined on. Under the terms of the brief "there was raised by charitable contributions for the then deplorable sufferers the inhabitants of the town, money for building groynes, bulwarks and fortifications against the sea in order to preserve such parts of the said town as was then remaining," to the amount of £1,700. This sum added to local contributions made it possible to secure the town as far as the Steyne, which at that time was the eastern boundary. About the middle of the eighteenth century the condition of Brighton began to change for the better, the fishing trade increased, and visitors of distinction were attracted by the facilities for hunting, racing, and water parties, and, what was of much more importance, began to be known as a health resort. "Science," says Horsfield in his pompous way, "invited fashion and fashion . . . has in the short space of half a century transformed the 'poor fishing village of bright Helmston' into one of the gayest and grandest of our favourite abodes."



DR. RICHARD RUSSELL.

[From the picture by Zoffany in the Permanent Art Gallery, Brighton. Reproduced by kind permission of the Director.]

The Medical Makers of Brighton.

The impetus to this transformation[7] was given by Dr. Richard Russell, of whom there is a most inadequate and inaccurate account in the *Dictionary of National Biography*, which does not even mention his connexion with Brighton. He is well worthy of a better record, and we are fortunately able to supply one which has the authority of the man himself.

Richard Russell.

Russell was the son of a London bookseller, and was born in 1687. "Having been educated" (says he in a letter to Dr. Addington, father of the statesman nicknamed by Sheridan "The Doctor," and known in history as Lord Sidmouth) "at Westminster School for eight years under the care of Dr. Friend, I directly applied myself to one of those arts, and afterwards to the rest which are generally looked upon as a necessary introduction to the knowledge of physic. Having gone through several courses of botany and anatomy under the most eminent professors of each, I put myself under a chemist of great business. During this period, at proper intervals, I read the book recommended to me by the most eminent physicians and attended the practice of several hospitals and infirmaries. Afterwards I went to Paris, where under the instruction of Monsieur Grégoire, the most celebrated man-midwife, I had a repeated insight of and likewise performed myself all the operations necessary in unnatural as well as natural births. Having taken a degree in physic at Rheims, where Dr. Pitcairn graduated, I returned to England; and having been examined by the London College of Physicians, received from them a diploma acknowledging the validity of the degree and granting me their license to practise." Upon the recommendation of Drs. Mead, Monroe, and Dod, Dr. Russell was chosen physician to the branch of Christ's Hospital at Ware in Hertfordshire; afterwards he removed to Henley, where he practised as a physician and man-midwife. This information is contained in a pamphlet written by Dr. Russell, the title of which gives the reason for its publication:

"*A letter to Dr. Addington of Reading on his refusal to join in consultation with a physician who had taken his degree abroad and was approved and licenced by the College of Physicians in London.*"

This was published in 1749, and in 1751 there appeared another pamphlet with a title-page to the following effect:

"*A letter to Mr. T. Bigg, late surgeon of St. Bartholomew's Hospital, occasioned by his having written a defamatory letter to Dr. Addington against Dr. Russel of Reading, which the former clandestinely communicated to many persons in order to excuse his not answering Dr. Russel's letter to him and to obstruct and hinder the course of his practice.*"

Of the merits of the quarrel, for which there must have been reasons beyond what appear in these explanatory title pages, we know nothing, and the details if known would be uninteresting. One may gather that Dr.

Addington took the line of the Tunbridge Wells physician in *Ferdinand Count Fathom*. It may be remembered that when Fathom started in practice his first patient was a girl suffering from hysteria owing to a disappointment in love. The family physician happened to be away, and Fathom's treatment was successful. When the physician returned he was in a great rage at having been supplanted, and refused to consult with Fathom, saying he was resolved never to consult with any physician who had not taken his degrees at either of the English universities. "Upon the supposition," replied Fathom, "that no person can be properly educated for the profession at any other school?" "You are in the right," answered Dr. Looby. "That is one of many reasons I have to decline the consultation." "How far you are in the right," retorted Fathom, "I leave the world to judge, after I have observed that in your English universities there is no opportunity of studying the art. No, not so much as a lecture given on the subject. Nor is there one physician of note in this kingdom who has not derived the greatest part of his medical knowledge from the instructions of foreigners." Looby, incensed at this assertion, which he was not prepared to refute, exclaimed in a most infuriated accent, "Who are you? Whence came you? Where were you bred? You are one of those, I believe, who graduate themselves and commence doctors the Lord knows how. An interloper, who without licence or authority come hither to take the bread out of the mouths of gentlemen who have been trained to the business in a regular manner and bestowed great pains and expense to qualify themselves for the profession. For my own part my education cost me fifteen hundred pounds." "Never was money laid out to less purpose," said Fathom, who, although he had never been at the trouble to take a degree anywhere, had the best of the argument. The passage gives a notion of the state of medical education in this country in the middle of the eighteenth century.

About 1752 Russell went to London and was soon after elected a Fellow of the Royal Society. He was subsequently appointed a physician to St. Thomas's Hospital. In 1750 he published in Latin his well-known *Dissertatio de Tabe Glandulari et de usu aquae Marinae in Morbis Glandularum*. This work again appeared in 1753 in an English translation with additions. This work brought him a number of patients, and he about this time removed to Brighton. In 1755 he published another work on diseases of the glands. It is entitled *Oeconomia naturae in morbis acutis et chronicis glandularum*. These works won for him a wide reputation, and his celebrity attracted numerous visitors to Brighton.[7] Russell was one of the most strenuous apostles of the new religion of sea-water, and had a lively faith in its virtues. He used it internally as well as locally in all kinds of tuberculous affections, and in scurvy, constipation, "flux of the belly," ozaena, skin eruptions, renal calculus, "scirrhus," and a number of other diseases. For the accommodation of the visitors a number of comfortable lodging houses were erected, and the fishing village grew into a town.

In early life Russell, before his visit to the Continent, had married the daughter and sole heiress of William Kempe, at whose death he became in right of his wife possessor of the deanery of South Malling, with the lands formerly belonging to the college. He died in 1759 while on a visit to a friend in London, at the age of 72, and was buried in the family vault at South Malling. The Rev. Dr. S. Manningham, of Jevington, celebrated him in the following lines:

> Clara per omne aevum Russelli fama manebit,
> Dum retinet vires unda marina suas.

The house occupied by Russell at Brighton, which was called Russell House, stood south of the Steyne on the site where the Albion Hotel was afterwards erected. We agree with Horsfield that it ought to have been preserved. There is, however, a street in the town named after him. A finely painted half-length portrait by Zoffany, which used to adorn the upper end of the ball-room of the Old Ship Tavern, was presented by the proprietor to the Brighton Corporation and is now in the Fine Arts Gallery. We are indebted to the courtesy of the Director, Mr. Henry D. Roberts, for the photograph reproduced on p. 1622.

[7] As it is on record that a certificate was granted on October 21st, 1683, by the parish officers to Francis Board, gentleman, for the King's Evil, it has been conjectured that sea bathing was even then in use for scrofulous complaints at Brighton.

Anthony Relhan.

After the death of Russell his place was taken by Dr. Anthony Relhan, who did much to increase the repute of Brighton as a health resort. In 1761 he published *A Short History of Brighthelmston*,[8] in which he says the town improved daily as the inhabitants, encouraged by the late great resort of company, seemed disposed to expend the whole of what they acquired in the erecting of new buildings or making the old ones convenient. He speaks of their new way of ornamenting the windows and doors "with the admirable brick which they burn for their own use" as having a very pleasing effect. Waxing prophetic, he says that if the increase of buildings in the next seven years should be equal to what it has been in the last, there will be but few towns in England that will excel this in commodious buildings. Elsewhere he says that some years have now elapsed since a mineral spring was accidentally discovered to the north-west of the town at the distance of half a mile.

> The peasants who first made the discovery, though unacquainted with the virtues of its water and even displeased with the taste of it, resolved to preserve it for the use of themselves and the sheep which feed around it; no spring besides appearing upon the service in all these downs, no pool of even stagnant water. The spring he says issues from the declining part of a little hill covered with firs. The soil around is loamy with various strata of bole, ochre, and umber. In some time this spring was observed to depose an ochrous sediment in its overflowings into a bottom where nature has provided a flat for a kind of reservoir. "The colour of this sediment having engaged many persons to speak of the water as containing a mineral in it, a gentleman now living there tried it for a complaint in his stomach for the relief of which he was then preparing to go to a foreign water and was effectually restored by it to his former health."

This case led others to resort to the spring for various complaints, some, it is frankly stated, without success, but others derived benefit therefrom. "Many more would have used it had not the uninviting manner in which the spring was kept disgusted them. At length the proprietor, encouraged by many applications, enclosed the spring with a brick wall, sunk an iron pot pierced with two holes for the water to flow in at, and covered it with a wooden top that locks down to secure it from the injuries of dirt, etc., leaving a free passage for the overflowing water to empty itself into the reservoir." But as the virtues of the spring, even with these improvements, were not sufficiently known it was but little used, says Relhan, "until last summer [1760], when many persons drank it on the spot and some few used it at home." Several experiments had proved the water to be of the class "improperly stiled chalybeats," and presuming from the taste of it that it differed little from that of Tonbridge. From the injudicious use of the water many people suffered from slight fever, headache, and piles, effects due to the constipating power of the water due to the quantity of ochre contained in it.

> And if we reflect on its being drank in the same proportion as the Tonbridge waters, upon the idle presumption of their being alike, we shall have less reason to be surprised at these effects, since it appears by Dr. Lucas's account of the latter, which is extremely exact, that a pint of it contains but two grains and three-quarters of solid matter in it as far as evaporation discovers; yet that of Brighthelmston, subjected to the same operation, yields in the same quantity thirteen grains and nearly three-quarters.

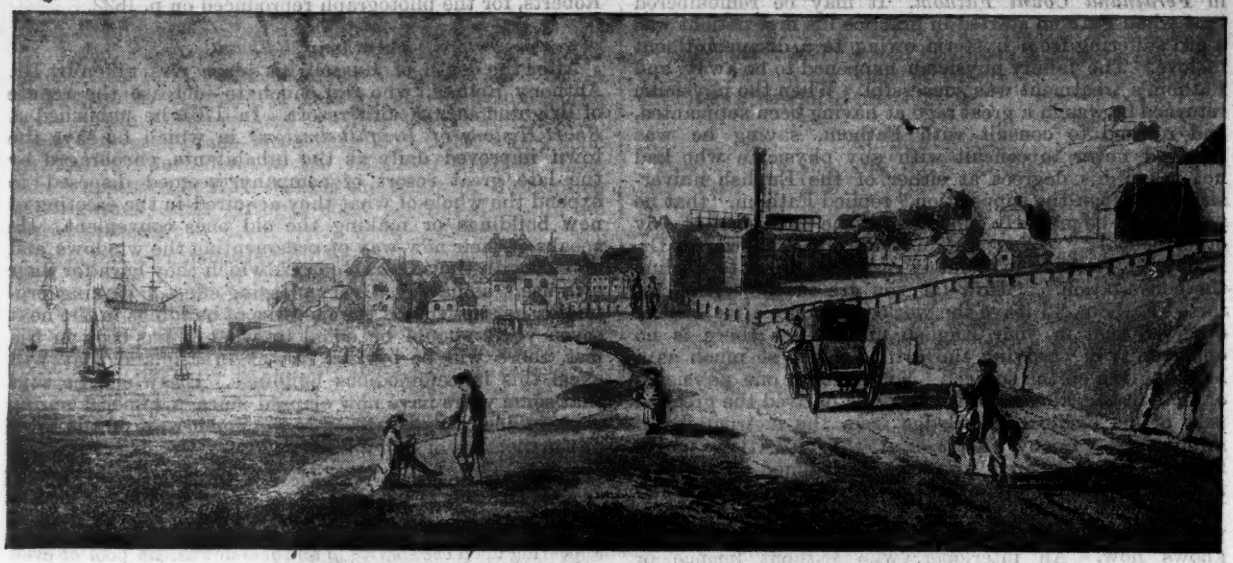
Elsewhere he speaks of the extraordinary fecundity of the sheep which drink this water, but with cautious reserve he adds, "Observation, as far as I can learn, does not yet authorize any one to assert in its favour on this account as to the human species."

John Awsiter.

Writing in 1768 Dr. Awsiter[9] gives us a good idea of the bathing accommodation of Brighton at that time.

[8] *A Short History of Brighthelmston.* With remarks on its air and Analysis of its Waters, particularly of an uncommon mineral one, long discovered, though but lately used. By Anthony Relhan, M.D., Fellow of the Royal College of Physicians in Ireland. London: Printed for W. Johnston, in Ludgate Street. 1761.

[9] *Thought on Brighthelmston, concerning sea bathing and drinking sea-water. With some directions for their use. In a letter to a friend.* By John Awsiter, M.D. Printed for J. Wilkie, in St. Paul's Churchyard, London. 1762.



Brighton about 1800.

The coast being open to the main sea, there was no shelter for the bathers from the wind, which set in to the shore almost constantly. He accordingly recommended that at least half the number of machines should be provided with screens projecting from the top of the door to the water, somewhat after the manner of those at Margate. These would keep off the wind and make the machines more private. We gather from him that the shore on the east of the town was allotted to ladies "without any mixture of gentlemen," and he suggests a further rule that no man-servant or inhabitant be permitted to bathe on that side of the town during the season. He says "sea water is a noble remedy for all diseases of the skin, old ulcers, and diseases of the glands. Even hereditary complaints have yielded to it." He seems to have been a somewhat credulous person, for he says that sea-salt properly applied is "a present cure for the bite of a mad dog." The *rationale* of the cure was supposed to consist in the action of the salt upon the malign virus of the wound before it could make any progress to infect the circulation. The salt, says Awsiter, by being dissolved in urine becomes more active, and is particularly assimilated to penetrate into any part of the body to which it is applied. This cure is given to illustrate the power of salt (the active principle of sea water) in destroying the acrimony and poisonous quality of sores and wounds, and as such disposing them to heal.

Hence by a proper use of seawater, obstinate breakings out, old and inveterate sores on any part of the body, diseases of the glands, the evil, and even cancers (if the parts are not too much injured) may be remedied. Seawater bathing is serviceable also in rheumatism, painful contractions of the limbs, palsies, and epilepsies. Respecting cancers it may not be amiss to observe that by keeping them constantly wet with cloths dipt in some of our English mineral waters, the malignity of them has been destroyed and cures performed. But I am inclined to think seawater more effectual. Seawater is serviceable also in some female complaints and one in particular: in cases of barrenness I look upon seawater to stand before all other remedies.

Awsiter's special contribution to the medical literature of Brighton is his recommendation of baths of sea water heated to different degrees of heat as the nature of the disease may require. For this purpose, he says:

I wish to see a set of baths erected. The building to contain these baths must be near the sea on account of the water. I would recommend the bathing rooms to be finished in a plain but neat taste, and the baths themselves respecting shape and size to be nearly similar to those erected by the Duke of Kingston at Bath, a building whose area is 30 feet and twelve feet high will admit of four rooms with a bath in each, a lobby for servants to wait in, with a space behind them the whole length of the building, for the copper, fuel, and cold bath which must be kept supplied with fresh sea water pumped out of the sea at half tide. One end of this room may be made also a sweating room by a proper serpentine disposal of the copper flue. There must be a communication by pipes from the copper, the baths, and a like communication from the reservoir, that the baths by this means may be attemperated to any degree of heat required; and here it is necessary to observe, unless ordered otherwise by the physician, that a hot bath should never exceed the natural heat of the body, and any medium between 50 and 80 degrees of Fahrenheit's thermometer will be a good standard; for if at blood heat it may overcome and weaken the party too powerfully, but while in the bath the heat must be kept up by the addition of hot water. There should be chairs provided also as at Bath to take the patient from and back again to the bedside.

As nobody showed any disposition to carry this suggestion into effect, he undertook what he called the "troublesome office" himself. In October, 1769, the foundation stone of a building was laid at a place sheltered from the wind, south-west of the Steyn called Pooke. Sea water was conveyed to the baths, which at first were seven in number. In Horsfield's day they were known by the name of the Original or Wood's baths, and were second to none in comfort and convenience.

Development of the Town.

From a survey taken in 1770 it may be gathered that the number of houses in Brighton amounted at that time to 598. In 1773 an Act was obtained for the appointment of commissioners for lighting and cleansing the streets, lanes, and other thoroughfares within the town, for the prevention of nuisances, the holding and regulating of a daily market, the building and repairing of groins, and so forth, and making the shore convenient for the landing of coal, a duty of sixpence on every cauldron being allowed. Soon after this Brighton became the yearly resort of several families of distinction, while many members of nobility lived there occasionally. The Duke of Cumberland, the "Butcher" of Culloden, who was one of Russell's first patients, had a house there, and the Duke of Marlborough made it his summer residence. Other members of the aristocracy followed. With the enlargement of the town came the need of providing amusements, and a theatre was built in North Street in 1774. Before that time the only temple of dramatic art was a humble barn. Soon a larger building was required, and one was built in Duke Street in 1789. In 1807 a new theatre was built in New Road. Later developments do not come within the scope of this article. In 1786 a census of the town was taken, and the number of settled residents was found to be 3,600. The French Revolution helped to increase the population. In January, 1794, it was 5,669, an increase of more than 2,000 in eight years; and in 1891 the population was 185,402. The number of houses in 1794, according to a survey made in that year, was 1,221, more than double what it was in 1770.

(To be continued.)

ALCOHOL AND SOCIETY.

A COMMITTEE appointed early in 1908 by the Swedish Medical Society after several discussions on the subject of alcoholism has published a voluminous report on Alcohol and Society[1] which has already attracted a great deal of attention in Sweden, and if made generally available is likely to have much influence on opinion in other countries. The grant in 1909 of 3,000 kronor by the Swedish Government in aid of the committee's work invested the committee with a semi-official position.

The scope of the report, which occupies 390 pages, is wide, and it includes so many aspects of the case that even a short review of them all requires considerable space. The judicial and impartial tone of the report, in which evidence for and against various views on alcohol is carefully weighed, also renders it difficult to give a clear summary of the conclusions drawn. It is therefore possible to review only certain points of special interest in the report.

In the opening chapter it is pointed out that though various methods of investigating the different aspects of alcohol in relation to man are available, they have either not been utilized or the conclusions to which they point have been so distorted by rival factions that the perception of the public on this point has become blurred, and even responsible and powerful corporations have become callous. The opinions of medical men and other scientists on the effects of alcohol on the body have been so widely and persistently circulated without reservation or contradiction, that it is commonly believed that total abstinence, and therefore total prohibition, are founded on irrefutable scientific evidence. The reason why this propaganda has hitherto escaped criticism by medical men is to be sought in their appreciation of the good intentions of those who engage in it. The rejection of much of the evidence against alcohol does not necessarily imply the rejection of even the most rigid measures taken to repress alcoholic abuse, but on the other hand the danger of dogmatically founding a policy on a prejudiced and false basis is indicated.

In the earlier chapters of the report the effects of large and small doses on the organism, and the relation of alcohol to poverty, crime, and other conditions are discussed. In this section little is added to information already published; but the reports of previous investigations are carefully summarized, and much evidence which has become almost classical from frequent quotation is weighed and some of it found wanting.

Poverty.

The effect of alcohol in producing poverty is admittedly great, but statistical analyses on this point are, it is stated, so strikingly at variance that at present an estimation on this basis is impracticable. According to official statistics for the years 1907 and 1908, the proportion of cases in which drunkenness in Stockholm was the cause of claims on poor relief was only 0.4 per cent. Investigations in Stockholm for the year 1900 had shown that the proportion was as high as 51.7 per cent. The material used for this latter investigation was, however, limited. Similar comparative investigations in other parts of Sweden also showed great variations; thus, while the proportion in Oppmanna was only 5.8 per cent., it was 56.3 per cent. in Sveg. The enormous expenditure by the working classes on alcohol is well illustrated by a comparison between the sums spent in Stockholm on brandy and other highly intoxicating liquors and those spent in rent of lodgings consisting of one room and a kitchen. These sums for one year were 4.5 and 5 million kronor respectively. Yet the cost to the working man of beer was not included in this estimate.

Crime.

The effect of alcohol on crime is, again, a matter of everyday experience, but statistical analyses are, it is said, open to grave error. Wieselgren and Wirén have estimated that during the period 1877 to 1907 not less than 73 per cent. of convicted male criminals in Sweden attributed their crime to alcohol; that crime is four times oftener traced to temporary intoxication than to chronic alcoholism; and that alcohol has much less effect on crime among women. This auto-analysis, which is reported by prison chaplains, is open to the criticism that criminals, though unwilling to stamp themselves as chronic alcoholics, are ready enough to excuse their crimes by a plea of drunkenness. Even when crime has been committed in a state of intoxication, it may yet not depend on the intoxicant, for in many such cases the offenders are latent criminals whose alcoholism bears only an accidental relationship to their crime. An intimate personal knowledge of each criminal, it is held, is therefore necessary before crime can be traced to alcohol alone. On the other hand, a criminal may be subject neither to acute nor chronic alcoholism, yet his crime may be traced to the influences of a home in which either the father or the mother was alcoholic. Doubtless crime would be appreciably reduced by the withdrawal of alcohol from the community; but the report adds that the same result might be attained by stringent measures against drunkenness and the abuse of alcohol.

Heredity.

In a chapter devoted to alcoholism and heredity the investigations on which theories have been built are ruthlessly examined and rejected. The committee does not, it is true, deny the possibility of alcohol affecting the progeny of its victims, but finds that the sources of error to which most methods of investigation hitherto used were liable, render the conclusions to which they point invalid. The predominating error is the lack of distinction between cause and effect, and the failure to perceive that alcoholism, particularly in its extreme forms, is very often the outcome of a pre-existing psychic faultiness of constitution. For investigations on this point to be convincing it is, among other things, necessary that the material chosen shall not present marked psychic blemishes. Such an investigation, the committee considers, has not yet been undertaken; it would require both the critical faculty and a knowledge of psychiatry.

The work of the Galton Eugenics Laboratory on this subject is favourably reviewed, as it is not open to the criticisms to which earlier investigations are.

Disease.

The relation of alcohol to disease is a vast subject to which, it is said, much and inaccurate literature has been devoted. The committee concedes that venereal disease is often the outcome of a degree of intoxication sufficient to blunt moral susceptibilities; but finds it impossible to estimate the exact importance of alcohol in this respect. When the sale of intoxicating liquors was prohibited during the recent general strike in Stockholm, there was no diminution in the number of fresh cases of venereal disease recorded in the hospitals and polyclinics. Possibly enforced idleness may have counterbalanced enforced sobriety, but no increase in venereal disease has been observed during other strikes when the normal sale of alcohol was unrestricted.

Control of the Sale of Alcoholic Beverages.

Sweden, on account of her association with the Gothenburg system, has commonly been regarded as the pioneer of sobriety and of the public control of alcohol. This is partly true. But the conditions under which the sale of alcohol now exists in Sweden are still far from perfect, and the committee's comments on this score are anything but flattering. Though Sweden's alcohol bill per head of population is only one-third of Italy's, yet the abuse of alcohol in the former country calls loudly for reform. It is an error to attempt to estimate the harm done by alcohol by taking the average consumption of alcohol by a nation as a guide to this nation's abuse of alcohol; Finland, whose consumption of alcohol per head of population is the lowest in Europe, is now contemplating total prohibition as the result of the alarming abuse of alcohol.

In Sweden the sale of highly intoxicating liquors is in the hands of the *Bolag*[2] and of the private individual. The Bolag's shareholders are entitled to a profit not exceeding 5 per cent., the rest being allocated mainly to the central government and the county councils. Local authorities

[1] Alkoholen och Samhället. Betänkande Angaaende de Samhällsskadliga Inflytanden Bruket af Rusdrycker Medför Jämte Förslag till Systematiska Aatgäder för Deras Bekämpande i Sverige. Paa Uppdrag af Svenska Läkaresällskapet. Afgifvet af Utsedda Kommitterade. Stockholm: Isaac Marcus' Boktr-aktiebolag. 1912.

[2] "Systembolag" or "Bolag" is the term applied to a company the profits and management of which are under public control. In Norway a similar institution is called a "Samlag," and in both countries a share of the profits is devoted to temperance work.

are accordingly tempted to ease the rates by facilitating the sale of intoxicants, and it is notorious that rival Bolags compete with each other in this respect. In Stockholm the sale of intoxicants on the premises of the Bolag's thirty public-houses is permitted only when food is also eaten, 10 öre's worth of food being an enforced adjunct to 8 öre's worth of alcohol. This restriction has increased the sale of alcohol off the premises, and banished drunkenness from the public-houses to the homes and alleys. This allegation is illustrated by the statement that the Bolag's sale of alcohol for consumption off the premises is five times as great as its sale of alcohol on the premises. The Bolags have, it is true, converted the old drinking dens into bright and airy eating-houses, but they have also done much to destroy the eating-houses where no alcohol is sold. The young unmarried workman, therefore, is driven to seek his meals in places where cheap and nourishing food is commonly sold with alcohol. The sale of beer is exclusively in the hands of private interests, and the sale of highly intoxicating liquors by private persons yields a profit proportional to the amount sold. The individual's interest in the promotion of the sale of alcohol is thus deplorably great. The State, too, receives large sums from the various duties on alcohol; and the revenue, central and local, from this source is about 45 million kronor a year.

Recommendations.

The choice of the alternatives—total prohibition or restrictive measures confined to the abuse of alcohol—is discussed fully by the committee, which favours the latter course. The influence of total prohibition on drunkenness is still largely a matter of conjecture. In the American States, where total prohibition has been attempted, the results are equivocal, and in Swedish Lapland total prohibition was so futile that the experiment was soon abandoned. To be effective, total prohibition must include a ban on the domestic production of alcoholic beverages for home consumption. Now, a solution containing as much as 14 per cent. of alcohol can be made from a saturated solution of sugar; and Sweden yields a plentiful supply of fruit from which agreeable alcoholic beverages can easily be prepared. The readiness with which alcoholic beverages can be prepared, and the opportunities for making money by the illicit sale of alcohol are, in the committee's opinion, the greatest stumbling-blocks to the success of total prohibition. The trend of public opinion in Sweden is towards the sacrifice of individual susceptibilities for the common good. The enforcement of total prohibition would, however, interfere with the liberty of many a law-abiding citizen whose loyalty to his country's laws must be seriously strained unless he is firmly convinced of the necessity for the laws. It is not enough that a majority shall be in favour of total prohibition; the minority must also be convinced that, before their personal liberty is restricted, all other methods of dealing with the abuse of alcohol have been tried and found wanting. Such is not the case in Sweden, and the committee has accordingly outlined a scheme, the principles of which are: The elimination of private interests in the promotion of the sale of alcohol, the restriction of the sale of alcohol for consumption at home, and the adoption of stringent measures against the notorious drunkard. The establishment of central and local authorities to deal with the regulation of the trade in alcohol is also proposed.

A striking feature of the report is the attempt to classify the subjects of alcoholism by a method both scientific and practical. The classification is too complicated for discussion in this brief review, and it should be studied in the original, together with the supplementary report of 173 pages, in which detailed histories of patients illustrating the various types of alcoholism are given. So few English-speaking people, however, possess an adequate knowledge of Swedish that a translation of the whole report would probably be a useful work.

Views of Swedish Temperance Organizations.

The publication of the report has stimulated temperance organizations to issue statements to the public, and we are indebted to the Executive of the Temperance Legislation League in England for the following information as to a manifesto adopted by the Swedish Templar Order at its annual meeting this year.

The manifesto begins by maintaining "that no complete and rational solution of the temperance problem can be reached unless prohibition of intoxicants throughout the whole country be adopted," and claims that all that is said in the Medical Society's report as to the ravages of alcohol, etc., is one of the most powerful proofs of the propriety of the demand made by temperance reformers for "the definite winding-up of the drink traffic." Nevertheless, the Templar Order will in the future, as in the past, "willingly be a party to all practical and partial reforms, even if they are only directed against the grosser abuses and aim at bringing about a more effective control of the distribution of intoxicants." Such partial measures, however, in its emphatic opinion, "can only temporarily, or to a certain extent, limit and restrict the destructive operations of the drink traffic"; they cannot "completely avert the alcohol danger." For this reason the Templars hope that the Government and the Riksdag "will take speedy and effective measures" to carry out the prohibition of intoxicants in Sweden.

"Since, however," the manifesto continues, "the winding-up of the liquor traffic, in view of the economic conditions associated with it, demands a certain transition period, the Templar Order urges that during this transition period all such measures be undertaken as are calculated to limit and to mitigate the operations of the liquor trade in the most effective way." The list of measures which the Order particularly recommends is of special interest to members and supporters of the Temperance Legislation League, including as it does a frank recognition of the principle of disinterested management, and an extension of the principle to the sale of beer. The measures recommended are:

1. The freeing of the State, "landstings," agricultural societies, and "communes" from financial dependence upon liquor revenues—a proposal which, to judge by the recently published report of the Swedish Royal Commission which investigated the matter, is not, at present, practical politics.

2. "The detachment of private economic interests from the sale of intoxicants and stringent restrictions in respect of 'off' sales."

3. New conditions for the sale of beer [*lit.* "a transformation in the sale of beer"] "with the object of removing private economic interests from it, and of ordering it in such a way that to carry it on may not defeat the effect of the restrictions which control the sale of "bränvin"[3] [that is, the native spirit now under the control of disinterested management companies]."

In this connexion provision should, it is urged, be made for a definite allocation of the profits from the sale of beer and for a new scale of excise taxation proportioning the tax to the alcoholic strength of the beer, as well as for new legislation to control the manufacture of wine.

4. The immediate enactment of local veto and also of a district veto "built upon it." The effectiveness of local veto to be safeguarded by special provisions for effecting the right of sale by breweries, delivery, etc.

5. Legislation for inebriates, and

6. Systematic and vigorous temperance educational work, including regular instruction on the alcoholic question in all public educational institutions, camps, barracks, etc.

[3] *Bränvin.* In Norway, at any rate, this is the generic term applied to all alcoholic beverages of and above a certain strength.

AT the meeting of the Royal Society on November 14th Dr. J. W. Cropper, M.Sc., described the development of a parasite of earthworms. Bodies had been found within some of the epithelial cells of the vesiculae seminales of the earthworm which closely resembled "Kurloff's bodies" found within the lymphocytes of guinea-pigs. By means of the jelly method of examination the development of these bodies into free spirochaetes had been demonstrated in the same way that it had recently been shown that "Kurloff's bodies" also became spirochaetes. It was suggested that these new parasites should be called *Spirochaeta lumbrici*.

THE International Congress of Physical Education will be held in Paris in March, 1913 (17th to 20th). The Congress is under the patronage of M. A. Fallières, President, and M. E. Loubet, ex-President, of the French Republic. A committee has been formed, with the support of the Académie des Sports and the Comité National des Sports, for the organization of the congress. Dr. Gilbert, professor of clinical medicine at the Hôtel-Dieu, is the chairman of this committee, and Professor Weiss, member of the Academy of Medicine, is the General Secretary.

LITERARY NOTES.

IN the JOURNAL of November 30th there appeared an article entitled, "Carlyle and Doctors." Reference was therein made to a letter to Syme. To this may be added another which appears in Miss Hutchison Stirling's recently published *Life* of her father (Dr. James Hutchison Stirling), pp. 57, 58. The letter is dated January 18th, 1842. Carlyle writes:

> Practically, my advice were very decidedly that you *kept* by medicine; that you resolved faithfully to learn it, on all sides of it, and make yourself in actual fact an Ἰατρός, a man that *could heal disease*. I am very serious in this . . . . A steady course of professional industry has ever been held the usefullest support for *mind* as well as body: I heartily agree with that. And often I have said, What profession is there equal in true nobleness to medicine? He that can abolish pain, relieve his fellow mortal from sickness, he is the indisputably usefullest of all men. Him savage and civilized will honour. He is in the right, be in the wrong who may. As a Lord Chancellor under one's horse-hair wig, there might be misgivings; still more perhaps as a Lord Primate, under one's cauliflower; but if I could heal disease, I should say to all men and angels without fear, "*En*, ecce!"

From the *Chronique Médicale* we learn that Professor Landouzy, on the occasion of the recent visit of the "V.E.M." (*Voyages d'Etudes Médicales*) to Vichy, dowered medical language with two new words. *Ville d'Eaux* (watering place) was glorified into "*hydropole*," and the gods of healing who minister at these shrines received the title of "*crénothérapeutes*" (Κρήνη, a well or spring). We commend these inventions of the etymological mind to the attention of the Balneological Society. Dr. Alquier, of Vichy, which he appropriately styles "*hépatopole*," has written some verses on the subject. The idea is worth developing. "Dr. So-and-So, Crenotherapeutist, of Podagropolis," would be impressive on a professional card. There might, of course, be some rivalry among the various watering places about the designation suitable for each.

The October number of *Science Progress* (John Murray) contains, among other communications, the third part of a paper on theories and problems of cancer by Dr. Charles Walker; the text of a contribution entitled, "The Relation of Mind and Body," by Dr. J. S. Haldane, to a discussion in the physiological section of the British Association meeting at Dundee; Professor E. A. Minchin's opening address in a discussion on the origin of life at a joint meeting of the botanical and zoological section of the same body; and a "chemist's fantasy" on the origin of life, by H. E. A., who might say, in a scientific sense, with the gentleman in the immortal lines—

> I care not a fig
> For Tory or Whig,
> But I sit in a bowl and kick round me.

This seems to be the fantastic chemist's attitude with regard to the philosophers who—without much success—sought at the meeting of the British Association to clear up the mystery of the origin of life.

We had something to say in a recent issue as to the connexion between genius or intellectual superiority and insanity, and we quoted a few instances. Here are some more. Alexander the Great was the offspring of "a woman of half wild blood, weird, visionary, and terrible," while his father Philip was drunken and sensual. Alexander himself is called by Johnson "Macedonia's madman." Joan the Mad was the mother of Charles V. Frederick William of Prussia, the father of Frederick the Great, was drunken, hypochondriac, eccentric, and brutal. His portrait as drawn even by the flattering hand of Carlyle is a picture of moral insanity. Byron's mother was half mad, his father dissolute and eccentric. The father of Beethoven was so renowned for his drunkenness that his death is said to have caused lamentation among the owners of wine-shops. Richelieu, Kant, Hegel, each had an insane sister. Baudelaire boasted that he came of a stock of idiots or madmen, who all died unnatural deaths: it must be borne in mind, however, that nothing delighted him so much as *épater le bourgecis*. Renan's paternal uncle and his grandfather were insane. Schopenhauer had a large number of mad folk in his ancestry. Shelley showed many signs of want of equilibrium. Lombroso in his *Man of Genius* gives innumerable instances, but his statements must be accepted with a large dose of salt as his mind was absolutely uncritical, and he found insanity wherever he looked for it. But many other examples may be found in Nisbet's book, *Genius and Insanity*, in Max Nordau's *Degeneration*, and in Arvède Barine's essays on pathological literature. The subject is excellently dealt with by Grasset in an address on intellectual superiority and neurosis, and is discussed in some of its aspects by Dr. C. J. Whitby in his book *Makers of Man*.

The *Journal of Pharmacology and Experimental Therapeutics*, as has already been stated in the JOURNAL, is now edited by Professor Abel of the Johns Hopkins University and Professor A. R. Cushny of University College, London. With them are associated a number of well-known therapeutic authorities. Great Britain is represented on the board of associated editors by Sir Lauder Brunton, Professor Cash of Aberdeen, Professor W. E. Dixon of Cambridge, Dr. J. A. Gunn of Oxford, Sir Thomas Fraser of Edinburgh, Professor J. N. Langley of Cambridge, Professor C. R. Marshall of St. Andrews, Mr. F. Ransom of London, and Dr. H. H. Dale of London. The periodical is published in England by the Cambridge University Press. The September number, which is the first of the fourth volume, contains the following papers:—Dr. D. E. Jackson: (1) The Pulmonary Action of Vanadium, together with a Study of the Peripheral Reactions to the Metal; (2) On the Production of Experimental Cephalic Coma; (3) The Pulmonary Action of the Adrenal Glands. Dr. Arthur B. Eisenbrey and Dr. Richard M. Pearce: A Study of the Action of the Heart in Anaphylactic Shock in the Dog. Dr. A. H. Ryan: Studies in Absorption of Drugs from the Gastric Mucous Membrane (I.) Strychnine Nitrate. Drs. H. H. Dale and P. P. Laidlaw: A Method of Standardizing Pituitary (Infundibular) Extracts. The *Journal of Pharmacology and Experimental Therapeutics*, which is issued bi-monthly, is excellently printed and well illustrated, and we think the publishers are justified in the feeling of confidence they express that now the ablest representatives of pharmacology in Great Britain have joined forces with their American and Canadian colleagues the journal will henceforth serve as the medium of publication for the best pharmacological researches made in English-speaking countries.

There can be no doubt that one of the greatest social reforms of the nineteenth century was the abolition of child labour. But although that blot has been removed from the face of English civilization, and children no longer work for sixteen hours a day in mines or factories, there is still much to be done to improve the condition of those who are forced to bring grist to the family mill at an age when they should be at school. Mr. W. Harwood, whose article on child labour appeared in the November number of *The Child*, gives a dismal picture of the evil effects of the "half-time" system, which is still prevalent in certain districts in the North. In different parts of Yorkshire, Lancashire, Cheshire, and Derbyshire many children, once they have passed their 12th birthday, are both wage earners and scholars, that is to say, they continue to go to school for a few hours every morning or afternoon, as the case may be, and spend the rest of the day working for a trifling wage in some big factory. The drawbacks of such a system are obvious. Not only have the "half-timers" a disturbing and in many cases a decidedly bad influence upon their schoolfellows, but they themselves deteriorate very quickly. The long hours in unhealthy surroundings, the strain of overwork, even the monotony of the work itself, soon react upon the sensitive organism of a child, and with the most deplorable results. Even the strongest and most intelligent boy or girl, after a few weeks of this unnatural existence, becomes listless and jaded both in mind and body; and much needless suffering and ill health, and even loss of life, often results from a pernicious system that stunts the growth and ruins the health of the child at the most critical period of its life. Another side of the problem of preserving the health of our school children is presented by Sir James Crichton-Browne in an article on school hygiene which also appeared in the November number of *The Child;* and Dr. John D'Ewart, in the same number, discusses the question of "School Infectivity." The contents of the November number likewise include an interesting account by Dr. A. Mackenzie Forbes of the Children's Memorial Hospital at Montreal, and a short sketch of the rescue work carried on by the Church Army Dispensary and Medical Mission is given by the honorary secretary, Miss Walker.

British Medical Journal.

SATURDAY, DECEMBER 7TH, 1912.

THE TREATMENT OF SIMPLE FRACTURES.

One of the most interesting features of the Surgical Section of the Annual Meeting of the Association at Liverpool was the presentation of the Report of the Committee on the Treatment of Simple Fractures. The cordiality of its reception was due to the prompt recognition that it contains a mass of material of immense value, and that the work has been accomplished quickly and thoroughly and in an unbiassed scientific spirit. The obvious sincerity and complete unanimity of the complimentary remarks of the speakers must have been a matter of great satisfaction to the Chairman of the Committee, Mr. W. J. Greer, of Newport, and his colleagues, and we feel assured that the whole body of the profession will unite in its congratulations and thanks.

The reference from the Council of the Association to the Committee was: "To report on the ultimate results obtained in the treatment of simple fractures with or without operation." The Committee was appointed in February, 1911, and within a month the investigation was begun. It was decided to limit the inquiry to simple fractures of the long bones which occurred, or in which operations had been performed, in the period of five years from January, 1906, to December, 1910, inclusive, so that no patient should be examined until at least six months had elapsed since the commencement of treatment. The method of inquiry adopted was in the first place to appeal to hospital surgeons and other practitioners interested to afford facilities for examination of cases. Next, arrangements were made for conducting investigations in the hospitals of twelve of the largest cities in the country. These hospitals were visited on certain days by two or more members of the Committee, who examined the patients independently of the surgeon in charge. Every patient whose case forms a part of the report was seen and examined personally by at least one member of the Committee. An elaborate form of inquiry for each fracture was drawn up, asking for information pertinent to the inquiry—the nature of the force, the site, form, associated injuries, treatment, duration of stay in hospital, duration of absence from work, result of skiagraphy before and after treatment, nature of union, condition of muscles and nerves, and present and former wage-earning capacity. The report is based on 2,940 cases thus personally investigated. When we consider the difficulty of following up hospital patients, the exacting nature of the form of inquiry, the frequent omission of some or other detail in routine reports, the possible loss of skiagraphs, the large number of cases investigated, we cannot help feeling that this Committee's work has been well and truly done.

It was soon apparent to the Committee that as it limited itself to cases treated not later than December, 1910, the disproportion between operative and non-operative cases must be great. And so, as a matter of fact, it is. The investigators examined 2,596 cases treated by non-operative methods and 308 treated by operative methods. These latter are divided into "three classes; A—cases in which operation was decided upon at once and performed as soon as practicable; B—cases in which operation was performed on account of failure to obtain and maintain accurate apposition by means of external mechanical appliances; C—cases in which operation was performed for non-union, for deficient union, or for faulty union whether in progress or complete." In Class A are to be found only 147 cases. It will be readily understood, therefore, that the Committee appreciates the fact that "the operative material available within the years selected is so small that it is undesirable to attempt to draw any final conclusion from this material as to the relative value of operative and non-operative treatment. The results are given in comparable form for what they are worth, but the Committee wishes emphatically to state its opinion that the chief value of its report lies in data collected and analysed as to the result of non-operative treatment."

Not the least interesting and informing part of the report is found in the appendices. These are mainly short original accounts of well-known methods of treatment of simple fractures by some distinguished surgeons. Members of the Committee visited Antwerp, where they saw the work of M. Lambotte, and he has contributed an illustrated account of his operative treatment. In Paris M. Lucas-Championnière was visited, and his views on the treatment of fractures by massage and mobilization are expressed in a synopsis from his own pen. Mr. Arbuthnot Lane, the pioneer of the operative method in this country, also contributes a short account of his methods; while the extension methods of Steinmann and Bardenheuer are shortly described by these surgeons themselves.

The conclusions to which the Committee has come are wisely placed on the first page; they are thirteen in number, and the whole of the work converges on them. The results of non-operative treatment in children are on the whole so good that they are not likely to be improved upon materially by any other method of treatment. But in patients more than 15 years old the aggregate results are not so satisfactory, and as people get older the functional result of non-operative treatment progressively depreciates. This fact is not so marked in cases treated by immediate operation. The ideal to be aimed at is a good functional result. The anatomical result may be indifferent and the functional result good, but that does not mean that there should be slackness in endeavouring to achieve accurate anatomical reposition. The method of choice should be one which promises definitely a good anatomical result; the methods of mobilization and massage have not been found to secure a high percentage of good results. If operative treatment is to be adopted, it should be undertaken at once, and not as a consequence of failure of non-operative methods. It should aim at accurate apposition and alignment and absolute fixation of fragments; the imperfect fixation of fragments by wire or other suture is unsatisfactory. The Committee recognizes that while rigid asepsis is essential a certain proportion of cases will go wrong in spite of the best technique. It is desirable that such operations should be undertaken only by surgeons of skill and experience, and in unimpeachable surroundings. To surgeons and practitioners who are unable to resort to the operative method under such conditions the non-operative procedures are

likely to appeal for some time as more safe and serviceable.

The general trend of the conclusions is a moderately strong advocacy of the primary operative treatment of a very large proportion of simple fractures. This was perhaps more pronounced in the short speeches of several members of the Committee when the Report was first presented to the Surgical Section. It is of value, then, to those who hesitate and also to those who appear not to hesitate to accept the new position, to read what Mr. Robert Jones has to say on the matter in his Presidential Address to the Liverpool Medical Institution. Mr. Jones recognizes at once that the results of the non-operative treatment as disclosed in the investigation of these nearly 3,000 cases are not nearly so good as they should be. If we take the Committee's figures, we find that a good functional result, irrespective of anatomical result, has been obtained in only 70.4 per cent. of the cases. But he is confident that the problem is not merely to ask the question whether primary operation is to become the recognized routine, but rather, in the first place, to improve non-operative technique, and, in the next, to lay down laws for guidance when to operate primarily. Mr. Jones's long and large experience leads him to advocate "treatment of simple fractures of long bones" in some cases "by means modified from traditional methods, and to anticipate and prevent subsequent impairment of function"; in others he lays special stress on after-treatment; and in others, again, though a small minority, he states that better results are obtained by immediate operation. He thinks, therefore, that we must not bind ourselves down to any one method or become fixed disciples of the operative school, or the massage school, or the splint and extension school. He suggests that the principles governing the reduction of fractures and their correct fixation should be more carefully taught; that the value of steady, continued, fixed extension with the limb in a proper posture should be more appreciated; and that the textbook periods of allotted time for consolidation of a long bone after fracture should be revised, that is, lengthened, since yielding at the seat of fracture often appears after the case has passed out of the hands of the surgeon. By perfecting mechanical methods the necessity for operation will, he thinks, be greatly lessened, and surgeons should, he says, feel almost a sense of failure when the bone has to be exposed. The personal equation will count for much. The surgeon who is a good handicraftsman will not require to operate so frequently as one who has little patience and less art.

Mr. Jones searches deeply for first causes of the indifferent results of non-operative treatment. These are not to be found in non-operative treatment as such, but in the methods of applying it. The difference between 70.4 per cent. of good functional results by non-operative methods and 79.5 per cent. of good functional results by operative methods is not so very great. May not that difference of 9.1 per cent. be bridged over by improvement in non-operative procedures, by more patient attention from surgeons, by longer stay in hospital, by more fostering after-care? The Committee points out that much better results are to be looked for in the future by primary operative treatment, that that method is still in its infancy, while the non-operative method is "thoroughly established." Here Mr. Jones joins issue with the Committee. He thinks we have no right to say that anything in a progressive science is thoroughly established. We must extract the best that is in the old before we can stretch out our hands to grasp the new. But there can be no doubt that a world of good has resulted from the recent focussing of surgical light upon fractures and their treatment, though that illumination would have been feeble enough but for the help of the less figurative and physically more penetrating Roentgen rays. Whatever the future may hold as to one method of treatment or another, it probably will still be best to judge each case on its own merits, not for the injury alone, but with an eye to the occupation of the injured man and his future efficiency in that occupation.

THE "QUEEN OF WATERING PLACES."

THE charms of Brighton are so great and manifold and it is so accessible that it may be confidently predicted that the Annual Meeting of the Association which is to be held there next July will attract an unusual number of members and visitors. Elsewhere will be found a sketch of its early history and its development from a fishing village to a small town periodically devastated by storms, and suffering from the ceaseless encroachments of the sea, its chief industry always threatened by the enterprise of rivals on the other side of the Channel and its shores exposed to invasion by foreign foes.

Whenever there was war between this country and France Brighton suffered. In 1545 the French landed there, hoping to find a footing in England. This led to the building of a fort called the Block-house, which long afterwards shared the fate of most of the buildings on the front and was washed away by the sea. In 1588 it was threatened by the Armada, but the town had then six large and ten small cannon, and the inhabitants prepared to fight in defence of their country. Apparently they had no opportunity of displaying their valour. In 1793 the fear of a French invasion led to the formation of a camp of 10,000 troops at Hove, and two new batteries were erected for the defence of the town. We mention these facts to show that Brighton had for centuries a hard struggle for existence against the elements and other hostile influences, a fact which makes its growth into a large and prosperous town all the more remarkable. Another thing which hindered its development was the badness of the Sussex roads. Writing in 1751 Dr. John Burton propounds the riddle, "Why comes it that the oxen, the swine, the women, and all other animals are so long-legged in Sussex?" And he suggests the answer in the further question, "Can it be from the difficulty of pulling the feet out of so much mud by the strength of the ankle so that the muscles become stretched, as it were, and the bones lengthened thereby?" When George IV made Brighton fashionable, the road between London and Brighton was greatly improved, and in 1821 there were forty coaches running daily to and from London, besides a vast number of private vehicles.

Brighton, however, owes its rise to prosperity to Dr. Richard Russell, whose book in praise of the virtues of sea water and whose success in the treatment of glandular and other diseases then and long afterwards called "scrofulous" brought wealth to the town and fame to himself. This almost forgotten physician is the true founder of Brighton as a health resort. George IV made it fashionable, but the inhabitants of London-on-Sea should not forget the debt they owe to the author of the *Dissertatio de Tabe Glandulari*, published in 1750, which

brought numerous patients to Brighthelmstone. Russell does not claim to have been the first to note the salutary effects of sea water and sea air; this was known to the ancients. But, as Sydney Smith says, it is not the man who first observes a thing, but he who calls it aloud so persistently that he gets people to listen to him, who is the real pioneer in a new territory of science. Brighton was already a growing place when, thirty years after the publication of Russell's book, followed up by those of Anthony Relhan and John Awsiter—both of whose names, it may be said in passing, are barbarously ill-used in the histories—invalids went thither in search of health. We find Johnson with the Thrales there as early as 1770. Some years later we gather from Fanny Burney that social pleasures were by no means lacking. But with the advent of the First Gentleman in Europe fashion gave it what Johnson himself might have called "potentialities of growing rich beyond the dreams of avarice."

The orgies of the Pavilion made decent people look askance at Brighton, but the town continued to thrive on its gambling, drinking, and debauched patrons. After the death of George, Brighton became respectable without ceasing to be fashionable. Thackeray is the *vates sacer* of early Victorian Brighton. He often refers to it, but we are sure readers will forgive us for quoting the description in *The Newcomes* which forms the opening of the ninth chapter:

"In Steyn Gardens, Brighton, the lodging-houses are among the most frequented in that city of lodging-houses. These mansions have bow windows in front, bulging out with gentle prominences and ornamented with neat verandahs from which you can behold the tide of human kind as it flows up and down the Steyn and that blue ocean over which Britannia is said to rule, stretching brightly away eastward and westward. The Chain Pier, as everybody knows, runs intrepidly into the sea which sometimes in fine weather bathes its feet with laughing wavelets, and anon on stormy days dashes over its side with roaring foam. Here for the sum of twopence you can go out to sea and pace this vast deck without need of a steward with a basin. You can watch the sun setting in splendour over Worthing, or illuminating with its rising glories the ups and downs of Rottingdean. You see the citizen with his family inveigled into the shallops of the mercenary native mariner, and fancy that the motion cannot be pleasant; and how the hirer of the boat, *otium et oppidi laudans rura sui*, haply sighs for ease, and prefers Richmond or Hampstead. You behold a hundred bathing machines put to sea and your naughty fancy depicts the beauties, splashing under their white awnings. Along the rippled sands (stay, are they rippled sands or shingley beach) the prawn boy seeks the delicious material of your breakfast—meal in London almost unknown, greedily devoured in Brighton. In yon vessels now nearing the shore, the sleepless mariner has ventured forth to seize the delicate whiting, the greedy and foolish mackerel and the homely sole. Hark to the twanging horn, it is the early coach going out to London. Your eye follows it, and rests on the pinnacles built by the beloved George. See the worn out London roué pacing the pier inhaling the sea air and casting furtive glances under the bonnets of the pretty girls who trot here before lessons! Mark the bilious lawyer escaped for a day from Pump Court and sniffing the fresh breezes before he goes back to breakfast, and a bag full of briefs at the Albion! See that pretty string of pratling school girls from the chubby cheek, flaxen-headed little maiden, just toddling by the side of the second teacher, to the arch damsel of fifteen, giggling and conscious of her beauty, whom Miss Griffin, the stern head governess, awfully reproves! See Tomkins with a telescope and marine-jacket; young Nathan and young Abrams, already bedizzened in jewellery and rivaling the sun in oriental splendour; yonder poor invalid crawling along in her chair; yonder jolly fat lady examining the Brighton pebbles (I actually once saw a lady buy one), and her children wondering at the sticking plaister portraits with gold hair and gold stocks, and prodigious high-heeled boots, miracles of art, and cheap at seven and six."

Elsewhere we read: "The Countess of Kew loved Brighton, and preferred living there even when Londoners find such special charms in their own city. London, after Easter, the old lady said, was intolerable. Pleasure then becomes a business so oppressive that all good company is destroyed by it. Half the men are sick with the feasts which they eat day after day. The women are thinking of the half-dozen parties they have to go to in the course of the night. The young girls are thinking of their partners and their toilettes. Intimacy becomes impossible, and quiet enjoyment of life. On the other hand, the crowd of bourgeois has not invaded Brighton. The drive is not blocked up by flys full of stockbrokers' wives and children, and you can take the air in your chair upon the Chain Pier without being stifled by the cigars of the odious shop boys from London." So Lady Kew's name was usually among the earliest which the Brighton newspapers recorded among the arrivals.

Thackeray, too, evidently loved the place; it was he who called it "kind, cheerful, merry Doctor Brighton." "Hail," he cries in a burst of enthusiasm, "thou purveyor of shrimps and honest prescriber of Southdown mutton. There is no mutton so good as Brighton mutton. No flys so pleasant as Brighton flys, nor any cliffs so pleasant to ride on." The day of flys is long past. The railway was opened in 1841, and now the London citizen can travel up in luxury to his business and get home comfortably in time for dinner. There is also, of course, the motor, which if it has not yet annihilated time and space according to the prayer of the lovesick poet has singularly simplified travelling about the country. Coaches still run between London and Brighton in the summer, but these are not like the old coaches in which the whole drama of courtship with the strictest observance of the unities could be enacted in one journey.

Brighton is indeed changed out of all recognition from the "poore village in Sussex called Bright Helmston" which it was in 1515. Its population was at the last census 131,250. This number, of course, is very largely increased by visitors who flock there during the season. The fashionable season extends from October to about February; but apart from the "Sussex Fortnight" in July and August, the Goodwood and other races, there are several distinct seasons, which together extend over the greater part of the year. But Brighton is not a mere haunt of the "idle rich." William Black, who so loved the wild scenery of the islands of his native land, retired there, as he found inspiration in the fishing villages near it, the country folk, the multitudinous sea with its ever-changing aspects and its atmosphere, which, he said, "promoted meditation, and was fruitful of noble thought." Herbert Spencer spent the closing days of his life there, and the number of men of letters and science, artists and philosophers who place themselves under the care of "Doctor Brighton" is beyond computation.

ANTIVIVISECTIONISTS IN SCOTLAND.

IT was in accordance with the fitness of things that Dr. Hadwen's campaign in Scotland should give rise to demonstrations by rival agitators. On November 25th Mr. Stephen Coleridge, as fugleman of the National Antivivisection Society, delivered an address at Edinburgh. A discussion in which Dr. Berry Hart took part followed, and there seems to have been a good deal of plain speaking. Mr. Coleridge, as usual, took up the position of Falstaff, "I deny your *major*." He asserted that no good had come of cancer research, and refused to acknowledge that the discovery of antitoxin for diphtheria, tuberculin for phthisis, and antityphoid inoculation were the result of vivisection experiments. Apparently, in his opinion, they came to their discoverers by intuition, as Minerva sprang full armed from the head of Jupiter. It was stated by Mr. Stone that the Royal Commission had gone "as far as might have been expected" in support of the suggestions of Mr. Coleridge's society. Mr. Coleridge and his society are easily satisfied. Before the Commission Mr. Coleridge made a number of charges against the officials responsible for the administration of the Act almost as long as Zola's famous *J'accuse* in the Dreyfus case. The comment of the Commissioners is crushing. They say (p. 14): "These twelve charges of Mr. Coleridge's are the outcome of a ten years' investigation of the administration of the Act by the Department, conducted by an acute and indefatigable critic, supported, as he told us, with ample funds. We have indicated the points on which we think that the administration of the Home Office may be open to criticism, but we are of opinion that, on the whole, the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view." Mr. Coleridge's bill, which those present were invited to support, does not explicitly provide for the abolition of vivisection, but by hedging it about with so many restrictions as to make experiments on living animals practically impossible, the bill—*si qua fata aspera rumpat* of parliamentary gestation—would strangle it, *tout doucement*, as Ambroise Paré would have said, with red tape. On November 26th Miss Lind-af-Hageby delivered an address at Glasgow. According to a report published in the *Glasgow Herald* of November 27th, she said there were two points to be specially considered in connexion with the question of vivisection—first, Was it right or wrong? secondly, What had vivisection done in the cause of science? Even supposing it were possible (which antivivisectionists denied) to alleviate human suffering and to prolong human life as a result of these experiments, that did not alter the fact that it was ethically wrong. It was said that the antivivisectionists grounded their arguments merely on sentiment, but sentiment was at the root of all the great things of life. The findings of the Royal Commission had, she said, all been in favour of greater restrictions. Regarding the experiments on animals, 95 per cent., she said, were performed without an anaesthetic. She cited cases in which animals had been kept alive for weeks or months after being operated on, and referred to the fact that dogs and other beasts were sometimes experimented on several times before being finally destroyed. This philanthropic lady does not seem to have deemed it necessary to explain that of the experiments done without an anaesthetic the vast majority were inoculations. We may also remind Miss Lind-af-Hageby that in regard to two of the experiments witnessed by her, and described in the book entitled *Shambles of Science*, the Commissioners came to the conclusion that she had misapprehended what had occurred. In view of the fact that some of the antivivisectionists show a disposition to insinuate that the Report of the Commission was in favour of their cause, it may not be out of place to quote once more the conclusions come to on the whole subject after an elaborate analysis of the evidence. These are as follows (p. 47): "(1) That certain results, claimed from time to time to have been proved by experiments upon living animals and alleged to have been beneficial in preventing or curing disease, have, on further investigation and experience, been found to be fallacious or useless. (2) That, notwithstanding such failures, valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases have resulted from experimental investigations upon living animals. (3) That, as far as we can judge, it is highly improbable that, without experiments made on animals, mankind would at the present time have been in possession of such knowledge. (4) That, in so far as disease has been successfully prevented or its mortality reduced, suffering has been diminished in man and in lower animals. (5) That there is ground for believing that similar methods of investigation, if pursued in the future, will be attended with similar results." The Commission further stated (p. 57): "After full consideration we are led to the conclusion that experiments upon animals, adequately safeguarded by law, are morally justifiable, and should not be prohibited by legislation."

AMERICAN SURGICAL CONGRESS.

THE third annual meeting of the Clinical Congress of Surgeons of North America was held in New York from November 11th to the 16th, under the presidency of Dr. Edward Martin, of Philadelpbia. Among the guests was Mr. Arbuthnot Lane. The work of the congress ranged over almost the whole ground of surgery. Dr. Martin took as the subject of his presidential address the surgery of the liver. Dr. W. J. Mayo discussed the surgery of the spleen. Dr. Abraham Jacobi, who was called upon as President of the American Medical Association, spoke of the standardization of medicine through the efforts of the congress and the association. He described the progress of surgery in an epigram: A decade ago it meant cutting; now it meant conservation. Dr. Crile gave an address on anaesthesia and "anoci-association," which, he said, meant the absence of harmful association, such as fear of the operation on the part of the patient. This exclusion of harmful association (we quote from the *New York Medical Journal*) was accomplished by putting to sleep all those cells which responded to the effect of general anasthesia. Some of the brain cells, however, were not affected by the general anaesthetic, and it was the effect of the shock on these cells which produced a disastrous effect on the patient. This effect Dr. Crile proposed to prevent by blocking off sensation from the areas in the field of operation by the use of local anaesthesia. He first anaesthetized the patient with ether or nitrous oxide, and then introduced a local anaesthetic along the nerves leading from the operative field to the brain. As local anaesthetics he used novocain and quinine and urea-hydrochloride. Observations of a large number of cases showed that the temperature and pulse-rate of the patient generally rose the day before admission to the hospital. Both temperature and pulse-rate also rose after operation, this rise constituting what was termed "post-operative fever"; this, Dr. Crile was convinced, was purely a neurological creation. He said that one of the essential elements in anoci-association was the attention to every detail connected with the comfort of the patient. This involved a larger hospital force, a larger number of nurses, and greater individual care of the patient. It might be objected that the mere comfort of the patient was a secondary matter, but statistics showed that comfort was an important item in the power for the resistance of the disease. At the Lakeside Hospital the deaths under anaesthesia in 1898, under the ordinary methods, were over 6 per cent. in the first thousand cases. In the last thousand cases anaesthetized

under anoci-association the deaths amounted to 1,5 per cent., though the death-rate of all cases in the hospital was 2.5 per cent. The harmful effects of anaesthesia were due to trauma of the brain cells from shock conveyed to those cells not affected by the general anaesthetic. This trauma could be obviated by blocking the pathway of sensation from the field of operation to the brain. This was an essential element of the procedure. Nitrous oxide was to be preferred to ether for the reason that the former did not oxidize the brain cells with which it was brought into contact, as did the ether. He urged the adoption of this method to reduce both the morbidity and the mortality. Dr. C. H. Frazier, of Pennsylvania, in a paper on the surgery of the spinal column, said operation on the cord gave hope of good results in the removal of tumours. He described a case of vesical paralysis which had been much helped by the performance of an end-to-end anastomosis of the third ventral and the first lumbar roots. This was, he believed, the first application of the idea to man, though Hilmington had made an experiment on the last lumbar and the second and third sacral roots in dogs. The results of that experiment were hopeful, but there had been no histological study of the final results of the operation. Mr Arbuthnot Lane read a paper on chronic intestinal stasis, which he defined as a "delay in the transmission of the intestinal contents independent of whether it is accompanied by constipation or not." He considered the intestinal tract as a living sewerage system. Some portions were inhabited by bacteria which became harmful only when through some fault in the sewerage system they passed out of their normal habitat, infecting other organs which they sometimes even reached by entering the blood stream, from which they might affect organs not in direct contact with their original habitat. Stasis produced discoloration of the skin, and was a frequent cause of serious nervous affections. He cited one case of tic douloureux sent to him for excision of the ganglion; he short-circuited the intestine instead, with the result that all pain ceased after eight days. Degeneration of the breast, not infrequently ending in cancer, was often due to intestinal stasis. He did not believe that cancer could occur in the abdominal viscera except when there was stasis. He referred to cases of exophthalmic goitre which had been completely relieved by ileo-colostomy. The congress, which was attended by more than two thousand surgeons, passed two resolutions—namely, that the lay press should be invited to make public as often as possible information as to the signs of incipient cancer in women; and that every practitioner should be compelled to obtain a special degree certifying his competence as a surgeon before he was permitted to perform surgical operations. The standard of efficiency was to be set by national legislation.

ROYAL COMMISSION ON SEWAGE DISPOSAL.

The Royal Commission on Sewage Disposal, which was appointed in 1898, has issued its eighth report,[1] which deals with the question of the standards to be applied to sewage and sewage effluents discharging into rivers and streams and the tests which should be used in determining those standards. In the next and final report of the Commission there will be considered the methods of disposal not involving water carriage and the standards in regard to trade effluents. The Commissioners consider that the most delicate chemical index of recent sewage pollution of a river water is to be found in the amount of ammoniacal nitrogen present. But while this determination may be relied on to show very small differences in degree of existing pollution, it is not equally reliable in indicating the character of the pollution as shown by the effect which the discharge of a given sewage liquor is likely to have upon the stream. It was found that the tests which were based on the rate and degree of absorption of oxygen were the most trustworthy tests for determining whether nuisance was or was not likely to be caused by the discharge into a stream of a normal sewage or effluent. After discussing the relative merits of tests for estimating the amount of oxygen absorbed, the Commissioners express a preference for that which estimates the amount of dissolved oxygen taken up in five days rather than that involving the amount of oxygen absorbed from permanganate in four hours, although they admit that the latter has the advantage of being more speedily determined and somewhat easier to work. It is recommended, therefore, that the dissolved oxygen absorption test should be adopted for the purposes of a standard. The conclusion drawn from a long series of experiments is that if 100,000 c.cm. of river water do not normally take up more than 0.4 gram of dissolved oxygen in five days, the river will ordinarily be free from signs of pollution, and that if a river water normally gives a higher figure than this it will almost certainly show signs of pollution, except perhaps in very cold weather. There may be circumstances in which sewage, either partially treated or not treated at all in the accepted sense, may properly be discharged into streams or rivers. Claims for a relaxed standard may, in the opinion of the Commissioners, be entertained when it can be shown that a particular river water is of such quality and volume that when mixed with a sewage or sewage liquor of known or calculated strength and volume, it does not or would not take up more than 0.4 part per 100,000 of dissolved oxygen in five days, and where there is reason to suppose, or when it can be shown, that the river will receive no further pollution until it has recovered itself so far as not to take up in five days an amount of dissolved oxygen much in excess of that which it took up before receiving the first discharge. The chief factor to be considered in fixing any special standard is the dilution to be afforded by the stream.

[1] Eighth Report of the Commissioners appointed to inquire and report what methods of treating and disposing of sewage may properly be adopted. Standards and tests for sewage and sewage effluents discharging into rivers and streams. Wyman and Sons. Price 3d. (Cd. 6464.)

THE SOCIETY OF APOTHECARIES.

In accordance with established custom the Worshipful Society of Apothecaries, on November 29th, entertained at dinner the new Lord Mayor of the City of London and his sheriffs. The society itself was officially represented by its Master for the present year, Dr. W. Bramley Taylor, who since his retirement from practice in Camberwell has been living in Weybridge, and by its senior and junior Wardens, Dr. Martindale Ward of Sutton, and Dr. Meredith Townsend of Kensington. The two Royal Colleges and the Medical Society of London were also officially represented among the guests, while a large number of well-known medical men were present, either in the latter capacity or as hosts. In responding to the toast to himself, his colleagues, and the Corporation of the City of London, the Lord Mayor (Sir David Burnett) dwelt upon the close association of the medical profession with the work of the Lord Mayor of London; it was commonly through medical men that the large sums collected by Mansion House appeals were put to their intended purposes, and medical men played the chief executive part in the work of the Corporation in guarding the country against epidemic invasion by way of the Thames. The toast to the two royal colleges was proposed by the Senior Warden, who described them as having played the useful part expected of them in connexion with the opposition to Mr. Lloyd George's original proposals as to the medical clauses of the National Insurance Act. The toast was acknowledged first by Dr. Frederick Taylor, on behalf of the absent President of the College of Physicians, and on behalf of the College of Surgeons by Sir Rickman Godlee, who in the course of his remarks alluded to the claim of certain members of

the Royal College of Surgeons to take part in the election of the council of that body. It was true that in the aggregate members of the College contributed a large sum to its funds, but individually it was not an annual payment, but merely the cost of their examination and diploma. Strictly speaking, the council was not a governing body, and it should not commonly play a prominent part in medico-political connexions; nor, indeed, could it well do so, since it was fully occupied with its primary duties—namely, the safeguarding of the portals of the profession by holding proper examinations and the care of its library and the largest museum of a medical kind in the world. As for the National Insurance Act, it seemed to the speaker that insurance should not be both compulsory and contributory. Probably it would sooner or later become non-contributory, and in that case the medical profession would be in the hands of the State only. Meantime it was in the hands of the friendly societies, for, despite the fact that Mr. Lloyd George had at first recognized the objections of the profession to that position, he had subsequently raised the number of representatives of the insured to such an extent as practically to reproduce the original condition. An alteration of this arrangement was, perhaps, the most important point to which the speaker and his colleagues should attend. The toast to the Society was proposed by Sir Watson Cheyne, President of the Medical Society of London, who first supplied a kind of Mark Twain history of the rise of the three corporate medical institutions of London and their early relations, and then, adopting a more serious tone, expressed a belief that if ever a one-portal system were established (the specialized bodies limiting themselves to the granting of higher diplomas and degrees) the Society of Apothecaries would certainly play an important part in the arrangement. In acknowledging the toast, Dr. Bramley Taylor pointed out that the Society, though it originally depended upon general practitioners as examiners, had for many years past caused all candidates for its licence to be examined by members of the teaching staffs of the great hospitals and schools. The character of its licence had also changed, since it now covered not only the work denoted by the word "apothecary," but also medicine, surgery, and midwifery.

PHARMACOLOGY INSTITUTE, UNIVERSITY COLLEGE.

THE new Pharmacology Institute at University College, an illustrated description of which appeared in the JOURNAL of November 30th, was formally opened on Wednesday, December 4th, by Sir Thomas Barlow. Lord Reay presided, and among those present were the Vice-Chancellor of the University of London (Dr. W. P. Herringham), the Principal (Sir Henry A. Miers), the Provost of the College (Dr. T. Gregory Foster), the Dean of the Faculty of Medicine (Sir Alfred Pearce Gould), the Dean of the College Faculty of Medical Sciences (Professor G. D. Thane), the Dean of the College Faculty of Science (Professor J. P. Hill), the Professor of General and Inorganic Chemistry (Sir William Ramsay), the Jodrell Professor of Physiology (Dr. E. H. Starling), the architect (Professor F. M. Simpson), the Professor of Pharmacology (Dr. A. R. Cushny), the Professor of General Physiology (Dr. W. M. Bayliss), the Professor of Pathological Chemistry (Dr. Vaughan Harley), the Chadwick Professor of Hygiene and Public Health (Dr. H. R. Kenwood), Sir John Rose Bradford, Sir William Church, Sir George Savage, Sir John Broadbent, Dr. Sidney Martin, Professor Bradbury, and Dr. F. W. Mott. The proceedings began with a speech by Lord Reay, in which he traced the evolution of the College as an integral part of the University of London during the last five years. The Institute of Physiology and the new Institute of Pharmacology, he said, were parts of a great scheme for the development of the College, in which, among other new buildings, there were to be a new chemical laboratory and a new anatomical institute. He stated that he was now at liberty to announce that the name of the anonymous benefactor who gave £50,000 for the removal of the school to Hampstead, which left room for the expansion of the College and made it possible for it to be incorporated in the University of London, was Mr. Gwyn Evans. Sir Thomas Barlow, in declaring the laboratories open, contrasted the study of drugs as it was in his student days with the great opportunities now afforded by the laboratories. He dwelt particularly on the combination of lecture-room and laboratory—a combination which enabled the student to see the effects of drugs for himself and to witness experimental demonstrations of the actions of drugs. He made an amusing reference to the way in which the profession had recently been lectured by journalistic oracles on its attitude towards quacks, and showed what an amount of precise scientific knowledge was required to determine the therapeutic effect of a remedy. The Vice-Chancellor moved a resolution of thanks to Mr. Andrew Carnegie for his generosity in providing the funds for the building of the new pharmacology laboratories. This was seconded by Professor Cushny, who stated that this was the first laboratory of the kind erected by the generosity of a private donor in this country. A vote of thanks to Sir Thomas Barlow was moved by Sir Henry Miers and seconded by Professor Thane. The laboratories were then opened to the inspection of the visitors.

QUACK MEDICINES IN AUSTRALASIA.

WE learn from the *Australasian Medical Gazette* (October 26th) that, in reply to a question, the Minister of Customs stated in the House of Representatives that seven prohibitions of "quack medicines" had been made by the Commonwealth Government during the past twelve months, in some instances in consequence of palpably misleading claims as to the efficacy of the compound, and in others because of the nature of the preparations themselves. In addition, objections had been taken to the claims practically of omnipotency accompanying 230 nostrums of various kinds, and makers had been warned that "such extravagant claims must be deleted." It was understood that some goods the importation of which was objected to were manufactured in the Commonwealth. A perusal of local advertisements showed that extravagant claims were put forth which would not be permitted in connexion with printed matter accompanying imported medicines. The Customs Department had at present no power to exercise supervision over the local manufacture or advertising of goods. It is quite clear, says our contemporary, that such power must be given sooner or later. It is absurd to prohibit the importation of quack rubbish and to allow the local manufacturer of worthless but expensive nostrums to go unchecked.

A PLEA FOR THE PIGTAIL.

DR. BUDBERG has sent from Charbin[1] a defence of the Chinese pigtail—an appendage which the progress of European civilization now threatens with extinction. He maintains that the pigtail, like many other national customs, owed its origin to hygienic motives, and in one aspect formed the basis of China's ancient civilization. He assures us that the effect of the pigtail is a more active circulation of the blood, which benefits the brain. He writes: "The observation we hear now and then that Chinese without pigtails show less intelligence strikes me as not altogether unreasonable, as an active circulation of the blood will not fail to influence the nourishment and development of the brain." He relates how the Chinese give special care to the head even of a newly-born baby, and how it is shaved, and no cloth, cap, or soft pillow is allowed to interfere with the circulation of the scalp. When the child grows bigger, the hair is tied together in

[1] *Deut. med. Woch.*, No. 30.

bunches, so as to expose the skin to the air, and thus promote perspiration. Later the hair is grown so as to form a pigtail, and superfluous hair is shaved away. The effect of the pigtail is a high and smooth forehead, and a face free from wrinkles; and so even old Chinese show smooth faces and a juvenile appearance. When rolled up on the top of the head, the pigtail acts as a substitute for a cap, and protects the head from the glare of the summer sun and the cold of winter. It also serves as a neckcloth and a pillow. As a cord, it is ever at hand to check haemorrhage. In addition to these virtues, the author attributes to it an inner and a moral meaning, for it is the symbol of the common nationality of 400 millions of people. Thus have Europeans, in dread of the power of China, adopted a method of protection by enticing the Chinese to become Europeans, and cut their pigtails off. This is the opinion of a European who, as we see, is more Chinese than John Chinaman himself. He neglects to remind us that the pigtail was only introduced by the Manchus somewhere about the middle of the seventeenth century of the Christian era, although it seems to be the fact that at an earlier date Chinese men let their hair grow long, and gathered it into a knot at the top. Still it remains for Dr. Budberg to convince us that the European Delilah is really devising the ruin of the Chinese Samson by tonsorial methods.

THE ROYAL SOCIETY.

At the anniversary of the Royal Society, on November 30th, the officers nominated by the Council were elected. The report stated that this year the Government grants for scientific investigations amounted to £3,458. At the anniversary dinner in the evening the toast of the society was proposed by Sir Rickman Godlee, President of the Royal College of Surgeons, who recalled the fact that, of the presidents of the Royal Society, five had been members of the medical profession and three Fellows of the College he represented. The medical presidents were Sir Hans Sloane (1727), Sir John Pringle (1772), an authority on military medicine and hygiene, Sir Benjamin Brodie (1858), Professor Huxley (1883), and Lord Lister (1895). The investigations in physics, chemistry, and biology recorded in the transactions of the society had, he said, enabled medical science to outgrow the empirical condition which had led Pringle to assert that plague could only be transmitted by the air and had induced the French to build earthworks as a protection against it. The President, in his reply, referred to the celebration last summer of the 250th anniversary of the society, which had been attended by cosmopolitan representatives of learning and science, and had been commemorated by a volume containing the addresses delivered at the anniversary and by the reproduction in facsimile of the signatures to the first charter. In conclusion, he said that the society was not a wealthy corporation, but had carefully to husband its resources, and he therefore appealed to rich men to put the society in a stronger position to maintain and extend its efforts for the advancement of science. Before sitting down he called upon the new German Ambassador, who responded by a speech which has been widely reported in the press. The toast of "The Guests" was acknowledged by Professor Metchnikoff, of the Pasteur Institute, Paris, who said that the distinctions awarded by the Royal Society were everywhere recognized as expressing an independent and impartial judgement. He concluded by thanking the society for the honour it had done him by electing him to be a foreign member.

GOSPEL OF HEALTH ON THE STAGE.

It is almost universally acknowledged, save by the few who regard the theatre as a special hunting ground of the Evil One, that the stage, when necessary, can prove invaluable as a means of propaganda. The mediaeval mystery plays were designed to bring home to their unlettered audiences the moral truths they had heard expounded in the pulpit; and similar methods are still employed by those who wish to gain a hearing from their fellow men. The latest attempt to popularize scientific doctrine in this fashion has been made by those votaries of modern hygiene who have at heart the extermination of tuberculosis; hence the production of a very pretty play by Florence Eaton and William Crossing, which was performed at the Court Theatre in the afternoon of November 27th, under the auspices of the Women's National Health Association of Ireland and the Women's Imperial Health Association. The scene of "The Triumph" (which is founded on Mrs. Eaton's book, *The White Demon*, is laid in an Irish village, where the Widow Murphy lies dying of consumption in her squalid cabin, and the demon Tuberculosis and his attendant imps are rejoicing over this addition to their long list of victims. Their hopes are dashed, however, by the timely intervention of the "good people" who take pity on the plight of the luckless Murphys, and teach them how to safeguard themselves from the attacks of the insidious enemy. They preach the gospel of fresh air, good food, and cleanliness as the royal road to health; and the play ends happily with the overthrow of disease by the spirits of Knowledge, Common-Sense, and their companions, headed by the life-giving Sunshine, and the restoration of the sick mother to health and to the arms of her rejoicing children. The play, which was very well received, was prettily staged and acted, the Irish parts, in particular, being delightfully played by well-known Irish actors. It was preceded by a prologue spoken by Miss Irene Vanbrugh, and witnessed by a large audience, which included the Earl and Countess of Aberdeen and several other well-known persons. The stage has been so frequently used to ridicule doctors and to propagate errors as to the healing art that we welcome this effort to make the stage a means of bringing the gospel of health home to the minds of the people.

DR. LATIMER OF SWANSEA.

The Swansea Division of the British Medical Association took the opportunity of Dr. Latimer's retirement from active practice in Swansea, where he has resided for forty-one years, to present him with a silver bowl. Mrs. Latimer was presented with an inlaid mahogany bureau. The presentation was made at a dinner, where expression was given to the respect and confidence which Dr. Latimer had earned during his long life of activity in Swansea. The hope was expressed that he would long live to enjoy his retirement to Tunbridge Wells, and would be able to continue his usefulness to the profession as the direct representative of Wales on the General Medical Council.

Surgeon-General Sir Anthony Dickson Home, V.C., whose interesting memoirs were reviewed in the Journal of July 27th, entered on his 87th year on November 30th.

It is announced that Mr. Austen Chamberlain has received intimation from the Governor of Mauritius that £200 has been voted by the Legislative Council as a contribution towards the fund which he is raising for the London School of Tropical Medicine. The fund has now reached £50,000.

The Royal Dental Hospital of London gave a clinical "At home" on November 23rd, the arrangements including demonstrations of the work done in its mechanical laboratory and *x*-ray department and histological exhibitions. There were also in attendance a number of patients whose cases typically illustrated the remedial treatment of different forms of dental disorder, including pyorrhoea alveolaris, as a cause of arthritis.

National Insurance Act.

THE REPLY OF THE GOVERNMENT.

THE Memorandum attached to the report of the Council to the Divisions published in the SUPPLEMENT this week is the reply of the Chancellor of the Exchequer to the observations made to him on behalf of the British Medical Association by the five representatives chosen by the Representative Meeting on November 20th.

The Memorandum is to be taken as expressing the final considered decision of the Government on matters which have been in controversy between it and the British Medical Association and the medical profession.

MATERIALS FOR JUDGEMENT.

The alterations in the terms and conditions of service to be rendered under medical benefit set out in the speech of the Chancellor of the Exchequer to the remaining members of the Advisory Committee on October 23rd, and in the Memorandum now published, have involved a revision of the Regulations, and the revised text is published in the SUPPLEMENT. For the full understanding of the alterations, and of the methods which the Insurance Commissioners propose to follow in order to bring medical benefit into force, certain other documents must also be studied. The first is a circular letter from the Insurance Commissioners to Insurance Committees explaining the administration of medical benefit, and making plainer certain matters as to the proposed working of the Regulations which are not easily discoverable from the perusal of the Regulations themselves. The second and third are model forms of agreement which an Insurance Committee might use with the doctors in its area on the capitation basis and on the payment by attendance basis respectively. The fourth is a model letter of invitation from an Insurance Committee to the doctors in its area to apply to be placed on the panel. All these documents are published in the SUPPLEMENT.

It is the bounden duty of every medical man in his own interest, and in the interest of his successors in the profession, and of its future welfare, to study carefully for himself the exact terms in which the answers and decisions of the Government are expressed in the Memorandum, the appended documents, and in the revised Regulations. The following paragraphs are designed only to serve as a general introduction, and do not profess to deal with all the points that arise.

The Government accepts some of the demands, refuses some, and with regard to others states that the terms of the Act render their acceptance impossible without an amending Act, or that they are matters to be adjusted locally by the Insurance Committees.

WHAT DOES MEDICAL BENEFIT INCLUDE?

The question what medical services are and what are not included in the term "medical benefit" was sought to be solved by asking the Government to state the services which an insured person would not be entitled to receive. The answer is that the point is to be determined by the terms of the agreement into which a practitioner on the panel would enter with the Insurance Committee. This, as set out in the first schedule to the Regulations, is such treatment as in the best interest of the patients can properly be undertaken by practitioners of ordinary professional competence and skill. The insured person would not be entitled to demand from any member of the panel services beyond those which every member of the panel might reasonably be expected to give.

Certain medical services fall within the Act; certain others are outside it. Those which are within the Act are such as can properly be undertaken by a practitioner of ordinary competence and skill. Those which are outside the Act are such as require special skill. The criterion is not the amount of time or anxiety involved, but the amount of skill necessary.

Such operations as the general practitioner can be reasonably expected to perform—operations not accounted major operations—and the administration of anaesthetics for the purpose of such operations, the non-operative treatment of fractures, attendance on miscarriages and abortions, the treatment of diseases due to personal misconduct, and visits, such as night visits and special visits which entail extra trouble, would be included among the services to be rendered under medical benefit, and would not carry any extra remuneration. That is to say, they would have to be rendered under the agreement with the Insurance Committee out of the fund formed in the area by the inclusive payment of 6s. 6d. a head of insured persons. The fund might be distributed among the practitioners on the panel of the area in one of the several ways noted below.

WHAT MEDICAL BENEFIT DOES NOT INCLUDE.

Medical benefit does not include major operations; and as an indication of what is intended by the term "major operations" the Memorandum instances trephining, laparotomy, operative treatment of fractures, amputations of limbs, and any operation requiring assistance, in the operation, of any additional medical practitioner besides the operator and the anaesthetist.

If a practitioner on the panel deemed an operation requiring special surgical skill necessary, his professional duty to his patient would preclude him from undertaking the operation when the circumstances were such that special surgical skill was available. In an urgent case where the services of a surgeon of special skill could not be obtained it would be the duty of the practitioner on the panel to undertake the operation without any extra fee. If, however, a practitioner on the panel were possessed of special skill, he would not be under an obligation to perform a special operation, except in emergency, as part of his ordinary attendance on a patient. If a dispute arose the medical practitioner would be entitled to refer the matter to the Local Medical Committee, and that Committee or the Insurance Committee would have power to refer the matter to a court of referees,

consisting of medical men and lawyers, to be set up for the purpose by the Government.

Diagnosis by means of the *x* rays, and pathological and bacteriological investigations, would not be services included in medical benefit. Such services must be provided in some way outside the system set up by the Insurance Act and must be paid for from some other source than the fund provided to defray the cost of medical benefit. Institutional treatment is not provided under the Act, except in respect of tuberculous patients admitted to sanatoriums.

Remuneration.

Stated generally, the amount of remuneration for medical services of all the medical practitioners on the panel in any area would be at the rate of 6s. 6d. for each insured person for a full year; but, save where a capitation system pure and simple was in force, the sum received by an individual practitioner in respect of each insured person might be less or might be more than 6s. 6d. If the insured person's name were only on the practitioner's list for less than a year, the payment would be reduced in proportion. If, for example, an insured person went to the seaside for a month and took the precaution to have his name transferred, his home doctor would only receive eleven-twelfths of 6s. 6d. Similarly, if an insured person removed from one place to another within the area of the same Insurance Committee, that Committee would make an adjustment between the practitioners on the panel of the different places affected.

The statement with regard to the remuneration to be paid for medical benefit makes it quite clear that, leaving out of account a possible addition which cannot exceed 6d. a head per annum from the floating drug fund, and the proposed capitation fee of 6d. for the treatment of insured persons suffering from tuberculosis, the amount of 6s. 6d. a head of insured persons will form a total round fund in any area out of which payment would have to be provided for every kind of service which any practitioner was under the obligation, by his agreement with the Insurance Committee, to render to insured persons on his list, save that in certain circumstances in rural areas a practitioner who was authorized to dispense for his own patients would receive the 1s. 6d. assigned to defray the cost of drugs and appliances.

The Government states that the way in which this total "area fund" shall be distributed cannot be determined by the Local Medical Committee, on the ground that the Act provides that it shall be determined in each area by the Insurance Committee after hearing the views of the Local Medical Committee, subject to an appeal to the Insurance Commissioners. Any one of three main principles of distribution might be adopted in an area—(1) Capitation pure and simple, the practitioner undertaking to give all medical treatment without mileage or other extras, and receiving in respect of every insured person on his list the full amount available for medical remuneration; (2) a smaller capitation fee for ordinary visits and surgery attendances with attendance fees for extra services; or (3) no capitation fee, but a fee for every attendance. In addition to these three methods, regard must be had to the probability that in some populous districts the application of the Harmsworth amendment to systems or institutions connected with works or collieries might involve the greater part of the insured persons in those districts. To this subject further reference is made below.

Persons Making Their Own Arrangements.

The attention of the Chancellor of the Exchequer was drawn to the passage in his speech at the Opera House on February 12th, in which he said that in any districts where there was no contract practice that form of practice would not be imposed. In such a case the money set aside for the doctors would, he said, be paid into the general pool of that area. The doctors would attend their patients on the same terms as of old, would send in bills against the general pool of the area, and if there was a balance the workmen would have to pay it. In the Memorandum it is stated that Mr. Lloyd George was referring only to the cases of injured persons who made "their own arrangements" under Section 15 (3) of the Act. The new grant towards the cost of medical benefit was intended to enable every Insurance Committee to secure that there should be in its area sufficient practitioners, whether acting on panels or under some alternative system, to attend insured persons in consideration solely of the remuneration provided by the Committee, the insured persons themselves being liable to no further charge for the services included in medical benefit. It would, however, be possible for any insured person to make his "own arrangements" with an individual practitioner, whether on the panel or not, on terms which would make him liable to pay to the doctor such amount, if any, as the doctor charged for attendance and treatment apart from drugs, during the year, beyond the amount available from the medical benefit fund.

Anaesthetics and Consultations.

The Government refuses to make any additional financial provision for the services of an anaesthetist—that is to say, the payment must come out of the area fund for medical benefit; under capitation pure and simple the practitioner would have to make his own arrangements. But the Government states that an insured person would not be entitled to a second opinion as part of his medical benefit, and where a second opinion was considered necessary the patient would have to make the arrangements—that is to say, the patient would not have a claim on any doctor on the panel other than the practitioner of his choice.

Mileage.

It was pointed out that though the question of mileage affected a relatively small number of practitioners it was a serious matter to them, and it was urged that it would be equitable to institute a Central Mileage Fund. This demand the Government is so far ready to meet that it undertakes to provide a small special fund to make increased provision for mileage in "exceptionally sparsely populated" districts—mountain, moorland, and fen. Otherwise it adheres to the decision that the cost of mileage must be provided out of the annual sum of 6s. 6d. a head of insured persons, the distribution of the sum to members of the panel, whether by a flat capitation rate or by a smaller capitation rate with separate payment for attendance, or by payments for each attendance, being left to be arranged locally in each area. At the same time it is stated that if an insured person should prefer to retain the services of a more distant practitioner in place of one residing nearer at hand, there was nothing to prevent him from making an arrangement with the more distant practitioner. The request put forward by the deputation that mileage should be reckoned at two instead of three miles from the practitioner's residence was not accepted. The point is not mentioned in the

Memorandum, and the distance is left blank in the Regulations.

RECORDS, REPORTS, AND INSPECTION.

With regard to records and reports, the Government states that the record of cases to be kept by practitioners on the panel would be short and simple, and that the books will be so prepared that the entry as to the nature of the illness and certain other particulars (but none by which the patient could be identified) will be separable, and would be used for statistical purposes only. The form in which it is proposed that the record should be kept is shown on a reduced scale at page 626 of the SUPPLEMENT. The Government undertakes that during the first three years no further report or information shall be required without the consent of the Local Medical Committee.

With regard to inspection, it is stated that medical officers of the Insurance Commission will report from time to time upon the general arrangements made by each Insurance Committee, upon the arrangements made by approved systems or institutions, and upon the contracts entered into by insured persons making their own arrangements. There would be no routine inspection of the medical practitioner's diagnosis and treatment, and the inspection would not include criticism of the treatment nor any interference between doctor and patient.

COMMITTEE OF INQUIRY.

To the representations of the Association that the tribunal before which a proposal to remove a practitioner from a panel would come should be a purely medical body with a legal assessor, the Government replies by undertaking that the Committee of Inquiry shall consist of medical men with one lawyer. This is an approximation to the procedure of the General Medical Council, which, when holding disciplinary inquiries, sits with a legal assessor. To the further request that the decision of this Committee should be final, the reply is that the Act does not allow the Commissioners to divest themselves of the responsibility of giving the final decision.

INCOME LIMIT.

To the request that a Local Medical Committee should have power to appeal to the Insurance Commissioners from a decision of the Insurance Committee as to income limit the Government replies that the Act places the discretion in this matter in the hands of the Insurance Committee, and therefore precludes such an appeal. To the request that the Government should lay it down that an Insurance Committee, in estimating the amount of income, should take into account receipts from all sources, it is replied that it is for the Insurance Committee to decide whether an income limit shall be fixed, and, if so, how the income shall be ascertained.

The Government gives its undertaking that in the first bill to amend the Insurance Act it will include a provision to meet the objection of the profession to being called upon to attend, on the terms offered, persons who, having been insured for five years, might under the Act remain in insurance as voluntary contributors, even though their income had subsequently increased beyond—often far beyond—the £160 a year.

DISPENSING.

The Government refuses, on the ground that the Act precludes such arrangement, to accept the proposal that practitioners should generally have the option of doing their own dispensing, but expresses its willingness to arrange that dispensing may be done in rural areas for insured persons residing more than a mile from a chemist on the panel. The term "rural area" is not defined.

HARMSWORTH AMENDMENT.

It was represented on behalf of the Association that the profession viewed with considerable apprehension the possibility of abuses arising under the Harmsworth amendment, which authorized the Insurance Commissioners to approve systems and institutions in existence at the time of the passing of the Act. Reason was shown for apprehending that approval would be sought for systems or institutions only colourably branches of previously existing systems or institutions, and that the drug fund might be diverted to other purposes. It was asked also how it was proposed that the free choice of the patient should be preserved, and canvassing obviated. To these representations it was replied that applications for approval would be carefully considered by the Commissioners; that contributions from medical funds for medical attendance or drugs and appliances must be kept distinct, and could not be diverted to other purposes; and that the patient retained free choice of doctor because he was free to choose or reject this method of obtaining medical attendance and treatment, and free to change at the end of any year.

REPRESENTATION ON INSURANCE COMMITTEES.

In view of the opinion that increased direct representation was not possible without an amending Act, the demand of the medical profession that it should have larger representation on the Insurance Committee was defined by the Association to be a demand that the medical members shall constitute not less than one-tenth of each Insurance Committee. In this the Government acquiesces, and undertakes that the Insurance Commissioners shall so exercise their right of nomination that the proportion of medical members shall be at least one-tenth.

MEETINGS OF DIVISIONS AND REPRESENTATIVE BODY.

The Council, in the report issued this week, has notified the Divisions in the United Kingdom that the returns of the voting at the special meetings to consider the present situation must be received at the central office of the Association not later than Wednesday, December 18th. This renders it necessary that the special meetings of Divisions shall be held in the course of the next ten days. The votes will be counted on December 19th, and the result reported to a Special Representative Meeting to be held on December 21st. Members of the profession who are not members of the Association will be invited to attend the meetings of the Division for the area in which they reside. The votes of non-members will be taken and counted separately.

The constitutional point raised as to the binding force of the result of the voting at the special Divisional meetings, which are to take place within the next ten days, was fully considered by the Council, which had before it counsel's opinion on the matter. It was pointed out that the Representative Meeting, in deciding that such a vote should be taken, did not claim more for it than that it would be a means of ascertaining the general opinion of the profession in the interests of the public, the Association, and the individual doctor. It hoped that the individual

would eventually be guided by the preponderating vote of the profession, but recognized that the vote would have no more than a moral effect, and would not be a binding decision of the Association.

The Council, in presenting to the Divisions the report of the interview of the five representatives with the Chancellor of the Exchequer stating the nature of the representations made to the Government, and indicating the character of the replies contained in the Memorandum, did not consider it desirable to add any recommendation containing advice on the question whether the terms as now set out should or should not be accepted. It looked upon its duty as ended when it had placed before the profession material for the formation of a judgement. It decided to summon a Special Representative Meeting to assemble in London on Saturday, December 21st. The inconvenience of the day was fully recognized, but so far as England, Wales, and Ireland are concerned, the following week will be broken by the Christmas holidays, and the desirability of not keeping the matter in suspense longer than necessary was a deciding consideration in fixing the earliest possible date.

The materials for a judgement are fully before the profession, and it will be for each member of it to record his vote on the question whether he is in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government. Though the result shown when the votes have been counted and the aggregate ascertained will not be a binding decision of the Association, it must carry great moral weight. The Representatives at the Special Representative Meeting on December 21st will be fully acquainted with the results of the voting in their own Divisions and throughout the profession.

The Last Word.

The Insurance Commissioners, we are given to understand, look upon the terms and conditions now set forth as the last word of the Government, and do not consider themselves under an obligation to invite Insurance Committees to postpone the promulgation of schemes for medical benefit in their areas until the decision of the profession has been ascertained. They are, in fact, issuing to Insurance Committees a Memorandum advising them as to the steps to be taken to bring medical benefit into force next month. This is accompanied by a model letter of invitation from an Insurance Committee to doctors in the area who desire to be placed on the panel, and model forms of agreement which Insurance Committees might invite doctors in the area to sign.

It is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with Local Insurance Committees or otherwise, before the result of the deliberations of the Representative Body at its special meeting on December 21st is formally announced.

Mr. Masterman, in replying to a question in the House of Commons by Mr. Harmsworth, on November 29th, said that the Highlands and Island Medical Committee had on the previous day considered its report in draft, and it would be published at the earliest possible date.

Medical Notes in Parliament.

Lead Poisoning.—In reply to Mr. Charles Duncan, on December 2nd, Mr. Ellis Griffith stated that the number of cases of lead-poisoning in spelter works in South Wales reported to the Factory Department since July 1st, 1907, the date on which the Compensation Act came into force, was 77, of which 4 were fatal. He was unable to say in how many of the non-fatal cases the workman was disabled from earning full wages at the work at which he was employed, so as to come within the provisions of the Compensation Act. Since the beginning of 1910 the number of cases had shown a marked decrease, as compared with the figures for the years 1908 and 1909, the total being 26, of which 1 was fatal.

Flannelette Burning Fatalities.—In reply to Mr. Joynson-Hicks, Mr. Ellis Griffith said that the attention of the Secretary of State for the Home Department had been called to the number of deaths from burning through the use of inflammable flannelette. Except as regards the year 1904, for which a special return was obtained from coroners and published in the Judicial Statistics for that year, the only official statistics as to the number of deaths resulting from the ignition of flannelette clothes were those given in the annual returns of the Registrar-General, which were based on coroners' certificates. From the return for 1910, it appeared that the number of deaths from burning clothes in that year was 657, and in 67 cases it was stated that the clothes were made of flannelette. The Coroners' Committee inquired into and reported upon the question a little over two years ago, and in the circumstances he did not think that the appointment of another Committee was called for.

School for Tuberculous Children.—Mr. Wedgwood Benn, in replying to Mr. King, on November 27th, said that a class of tuberculous children had been held in Regent's Park for over a year, and the use of the bandstand had been granted to them. No change was proposed. No other applications of a similar nature had been received.

Scottish Universities.—The Treasury was again questioned, on December 2nd, in regard to the stipulation accompanying additional grants in aid to Scottish universities. The replies made were to the effect that such observations as had been received from the bodies in question or those concerned in their affairs related to the difficulty of determining the right amount of an inclusive fee for the medical curriculum rather than to the effect of such fee on extramural schools. It was also indicated that the Treasury had seen no reason for consulting the Scottish Universities Committee of the Privy Council, or for seeking an opinion as to the legality of the stipulation under consideration. The Treasury did not agree that if a prospective medical student who depended on a Carnegie grant failed to obtain a leaving certificate on any given occasion, such failure *de facto* delayed his entry to a university for as long as eighteen months. The real delay was only a year, for even in present circumstances a student who passed in March could not enter the university until October. Hence the Treasury saw no reason to vary the reply given last week, this being to the effect that it was not prepared to arrange for the holding of an autumn as well as a March examination for leaving certificates.

Insurance Act.—The answers of Ministers to questions in Parliament as to the National Insurance Act will be found in the Supplement.

Vaccination in the Navy.—Mr. Bentham asked the First Lord of the Admiralty, on November 28th, whether, in view of the continued increase of exemptions from vaccination, he was prepared to make vaccination optional to recruits for the Navy. The Parliamentary Secretary to the Admiralty, who replied, said that he could not undertake to recommend that the Regulations of the service in regard to vaccination should be relaxed.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Administration of Sanatorium Benefit.

The London County Council on December 3rd received a report by Mr. J. A. Dawes, M.P., one of its representatives on the Insurance Committee for London, as to the work so far accomplished by the Committee, particularly with regard to sanatorium benefit.

The report stated that, with a view to avoiding any delay in making provision when sanatorium benefit came into operation on July 15th, the Insurance Committee framed a temporary scheme, a temporary subcommittee being appointed for each metropolitan borough and for the cities of London and Westminster. These subcommittees were composed of representatives of the Insurance Committee, the local authority and the various classes of insured persons, and, where possible, persons representing the employers' interests.

The Insurance Committee had appointed a medical expert, on whose advice it decided as to the granting of benefit and as to the form that such benefit should take. As a rule the applicant was examined in the first instance by his own medical attendant after the necessary evidence had been furnished of his qualification to receive benefit. In cases in which the medical expert advised institutional treatment the Committee, if it decided to recommend sanatorium benefit, arranged for the reception of the patient in some approved institution. Where dispensary or domiciliary treatment was advised the case was remitted to the local subcommittee to deal with. In a number of cases the medical adviser recommended hospital treatment, owing to the case being too advanced to hope that it would yield to institutional treatment, or because the patient required to be kept under observation in the first instance. The following were the particulars of applications received for sanatorium benefit and the action taken with regard thereto up to and including November 8th, 1912:

Total applications			495
Not eligible			25
Recommended for treatment—			
Cases in sanatoriums	84		
Cases in hospital	12		
(Two cases to be discharged and arrangements in progress for domiciliary treatment.)			
Cases where domiciliary treatment arranged	34		
Cases where dispensary treatment arranged	35		
Cases where hospital (out-treatment) arranged	6		
Cases awaiting reply from Mount Vernon ...	6		
Cases recommended, but still to be dealt with	8		185
Applicants who did not attend for examination—further arrangements to be made			6
Applicants awaiting examination—Form Med. II received...			89
Applicants in institutions—no liability			2
Applicants awaiting examination—papers sent to medical adviser...			32
Applications withdrawn			6
Applicants dead			5
Applicants referred to other county committees ...			15
Applicants who declined the treatment granted ...			2
Form Med. I received			128
			495

In most instances the Committee was paying 30s. a week in respect of patients sent to sanatoriums. Domiciliary treatment was arranged for in most cases through the patient's own medical practitioner on terms which had been temporarily agreed to by the Committee and approved by the Insurance Commissioners. For dispensary treatment the following had been approved by the Local Government Board:

Battersea Tuberculosis Dispensary.
Bermondsey Dispensary for Prevention of Consumption.
Finsbury Tuberculosis Dispensary.
Fulham Dispensary for Prevention of Consumption.
Tuberculin Dispensary, 263, Kennington Road, S.E.
Paddington and Kensington Dispensary for the Prevention of Consumption.
Borough of Poplar Dispensary.
St. Marylebone Tuberculosis Dispensary.
St. George-in-the-East Tuberculosis Dispensary.
Stepney Dispensary for Prevention of Consumption.
Whitechapel Dispensary.
Woolwich Dispensary.
Camberwell Dispensary for Prevention of Consumption.
Battersea Tuberculin Dispensary.

In a number of other cases it appeared that boroughs which had not at present any tuberculosis dispensaries had the matter under consideration with a view to establishing such institutions.

Schemes had been submitted by most of the temporary sanatorium subcommittees to provide for dispensary and domiciliary treatment, but these were only of a temporary character pending the final settlement of the question now under discussion between the Government and the medical profession as to the charges to be made for the treatment of tuberculosis, and pending also the formation of a more complete scheme of dispensaries for the whole of London.

The Committee had decided, on advice tendered by the Insurance Commissioners, not for the present to give sanatorium benefit to the dependants of insured persons, and this policy would be continued until a more clear idea had been obtained of the funds which would be available for the work. Particulars were being received from the various friendly societies with regard to insured persons in the county of London, but it would be some time yet before reliable figures were available as to the number of such persons, and as to the number of deposit contributories. The Committee was dealing with the question of the appointment of permanent district committees as provided for by the Act.

Sanatorium Beds in London.

As an outcome of the recent conference between representatives of the Metropolitan Asylums Board, the London County Council, and the London Insurance Committee (BRITISH MEDICAL JOURNAL, November 9th, page 1333) on the subject of the treatment of patients suffering from tuberculosis, a letter from the London County Council was read at a meeting of the Metropolitan Asylums Board on November 30th.

The clerk to the Council wrote that it was understood the Asylums Board had no vacant institution suitable for the purposes of a sanatorium, but that as a temporary measure the Board would be prepared to set apart a detached portion of one of their large country hospitals for the sole use of such tuberculous patients, to the number of about 500, as the London County Council might desire to send there. The County Council recognized that such an arrangement would not necessarily be a permanent one, but that such accommodation as was available at the moment would be made ready with the least possible delay, and that later the Board would be free to remove the patients to some more suitable establishment.

The suggestion of the County Council was that the Asylums Board should make this provision—appoint forthwith the necessary medical, nursing, and domestic staff, and supply all the requisite furniture and equipment for the reception of patients at the earliest possible date. Complete control as regards the selection and admission of patients and the length of their stay would be vested in or arranged by the County Council. The medical officers of the Council, of the Insurance Commissioners, and of the Insurance Committee would have the right to visit an inspect the institution and the patients at any time, but the Council desired that the Board, on account of its recognized experience in such work, should engage the staff, and undertake the general management of the institution. The Council would reimburse the Board of the entire cost, preferably by payment of a definite charge per head of the patients actually maintained, with a periodical adjustment according to the ascertained actual cost, or at a scale of charges according to the numbers maintained. Establishment expenses incurred prior to the reception of patients would be borne by the Council.

It was decided that the only institution available for the purpose at the present time was the Lower Southern Convalescent Hospital, and that the County Council be informed that, subject to the sanction of the Local Government Board, the Asylums authority would be prepared to allocate this hospital as a sanatorium under the Insurance Act on the conditions set forth in the Council's letter

The Hospitals Committee was instructed to take steps immediately for staffing, equipping, and opening the hospital as a sanatorium for tuberculosis patients with the least possible delay, the accommodation to be rendered available being 120 to 130 beds.

Warehousing Infectious Disease.

The Metropolitan Asylums Board on November 30th considered a proposal by the Hospitals Committee to appoint a research bacteriologist to inquire into the incidence and causation of zymotic disease. The Hospitals Committee stated that in November, 1911, Professor G. Sims Woodhead, the Board's consultative bacteriological adviser, made suggestions for the development of the Belmont laboratories and for extending the scope of the work there, and the Committee was of opinion that no further time should be lost in appointing a medical man trained in bacteriological research and capable of undertaking original investigations into the causation, infectivity, prevention, and treatment of zymotic disease. The several medical superintendents had been consulted in the matter and welcomed the proposal. Since 1870 the total number of admissions to the Board's fever hospitals had been upwards of 500,000, and the number of deaths nearly 40,000. Since the Board was constituted, about £15,000,000 has been expended in the provision of hospitals for, and in the treatment of, infectious sick persons, but no practical step had been taken with the view of ascertaining the causes of the diseases, sufferers from which were admitted into the hospitals. The total number of deaths from the principal epidemic diseases during the last five years in London had been 22,649, of which 10,199 (or 45 per cent.) were attributed to measles. The percentage of mortality of measles patients in the Board's hospitals in 1911 was 13.9. These facts alone justified a determined effort to save life, and to reduce the great expense involved in maintaining large isolation hospitals, but the desired results were only likely to be achieved when the causes of zymotic disease had been discovered. The time of the Board's bacteriologist, Dr. Cartwright Wood, was fully occupied in clinical investigations, in the production of antitoxic serum, and many other duties, and it would not be possible for him to undertake the work the Committee had in mind.

Some discussion took place on the recommendation. Canon Sprankling, who moved its adoption, pointed out that this country was very far behind others in the important work of original research. The reference back of the recommendation was moved on the ground that provision was made for research by the National Insurance Act and that the Board ought not to undertake a responsibility which properly belonged to the State.

Dr. Bousfield remarked that the Board had merely been "warehousing" infectious disease, treating symptoms, and making no investigations into the cause of disease. Expenditure on research would result in a saving of money to the ratepayers.

Professor W. R. Smith pointed out that the incidence of infectious diseases in London did not show any marked diminution, and the Board had done nothing to examine into the incidence of disease, although no other authority in the world had as wide a field for investigation and research.

The reference back was defeated, and the Board decided by a large majority to appoint, subject to the approval of the Local Government Board, a research bacteriologist, at a salary of £500 per annum, the Hospitals Committee being instructed to report further as to the details of the duties of the office.

MANCHESTER AND DISTRICT.

Cancer Research in Manchester.

At the annual meeting of the Christie Hospital for Cancer in Manchester, on November 28th, it was made clear that the facilities for research into the causes, prevention, and cure of cancer are seriously hampered by want of funds. The hospital has primarily to provide medical and surgical relief for persons suffering from cancer, precancerous conditions, and chronic ulceration, and also to provide a home for life for incurable cases which cannot be attended at their own homes, but when the hospital was established research work was distinctly contemplated as one of its main objects. During the past year 105 in-patients and 33 out-patients were treated, the number being about the same as in the previous year. The expenditure was about £330 more than the income. Voluntary contributions from patients and their friends have slightly increased, and averaged about £2 5s. for each patient, but the public subscriptions have for several years been falling off. This is specially regrettable in view of the statistics for malignant disease for Manchester. In the year 1911 no fewer than 750 deaths were certified as due to malignant disease, and the death-rate from cancer in Manchester has more than doubled in the last thirty years; it was 0.48 per 1,000 living in 1881 and 1.05 per 1,000 in 1911, and the increase was steady throughout the whole period. Whether this is partly due to improved methods of diagnosis or not, the fact remains that far more cases recognized as needing treatment for malignant disease are presenting themselves, and yet the public support of the Cancer Hospital is less than it was. The funds available are barely sufficient to meet current expenditure for treatment, and research work has to take its chance. In replying to a vote of thanks to the staff, Professor Wild said that since 1892, when the hospital was established, great additions had been made to knowledge of the disease, though a solution of its problems seemed to be no nearer. Laboratory work was very expensive, and therefore it was regrettable that the public subscriptions had fallen off. Dr. C. Powell White, Director of the Pilkington Cancer Research at the University, said that the search for the causes of cancer was an extremely difficult undertaking, as the direction in which to start was unknown. He warned the public against accepting reports of discoveries of cures for cancer, as no remedy had yet been found. He thought the future line of research would be largely chemical, and at present very little was known as to the chemistry of cancer. There was also much information to be gained from statistics showing what classes of the population were mostly affected, what were the occupations of the patients, and their distribution. He also drew attention to the notable advance that had been made in Manchester by the establishment of a large laboratory for microscopical and chemical work at the University. With the number of patients at the Cancer Hospital, it is a pity that the opportunities for research thus afforded should be even partly lost through lack of funds for research.

NEWCASTLE-UPON-TYNE.

The following is a syllabus of the winter scientific demonstrations arranged by the Newcastle-upon-Tyne Division of the British Medical Association, and to be given at the Royal Victoria Infirmary; all medical practitioners in the North of England are invited.

Friday, December 20th, 1912.—Dr. Horsley Drummond: Some Observations on Carcinoma of the Stomach. Professor Sir Thomas Oliver: Traumatism and Tuberculosis. Professor H. B. Angus: Tuberculous Disease of the Spinal Column. Dr. D. W. Patterson: Eczema, Its Etiology and Treatment. Professor Ranken Lyle: Menorrhagia.

Friday, January 17th, 1913.—Pathological Museum. Mr. N. McClay: Chronic Otorrhœa and its Treatment. Mr. A. M. Martin: Surgical Treatment of Joint Tuberculosis. Professor R. A. Bolam: Medico-Legal Tests for Blood. Mr. W. G. Richardson: Malignant Tumours of the Mamma, Diagnosis and Treatment. Mr. Hamilton Drummond: Haemorrhoids.

Friday, February 21st, 1913.—Mr. F. C. Pybus: The Treatment of Tuberculous Glands in the Neck. Professor T. Beattie: Treatment of Pulmonary Tuberculosis. Dr. W. E. Hume: Some Points in the Diagnosis of Early Phthisis. Dr. George Hall: Cervical Ribs and their Results. Mr. R. J. Willan: Diagnosis and Treatment of Malignant Tumours of the Prostate Gland.

Friday, March 21st, 1913.—Dr. A. Parkin: Mentally Deficient Children. Professor D. Drummond: Arterio-sclerosis. Mr. J. D. Wardale: The Treatment of Ophthalmic Emergencies. Dr. James Don: Chronic Suppuration of the Accessory Sinuses. Dr. W. D. Arnison: Local Treatment of Rheumatic Arthritis.

It has been decided that each medical man who attends a meeting shall be asked to contribute 1s. in order to help defray expenses. Further information can be obtained on application to the Honorary Secretary of the Division, Mr. R. J. Willan, F.R.C.S., 25, Ellison Place, Newcastle-on-Tyne.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

GLASGOW MEMORIAL TO LORD LISTER.

A MEETING of the Executive Committee on the proposed memorial to the late Lord Lister in Glasgow was held on November 27th, when the principal business was to receive a deputation from the Royal College of Surgeons of Edinburgh for the purpose of discussing the practicability of co-operation between Glasgow and Edinburgh in establishing a Scottish national memorial. The deputation comprised Professor Caird, Mr. George A. Berry, and Mr. Stiles. It was indicated that such a memorial might take the form of research laboratories.

It was resolved to recommend that the Lord Provosts of Edinburgh and Glasgow and the Principals of the universities of the two cities, who are members of the London Executive Committee, should be requested to keep prominently before that committee the claims of Scotland for an adequate share of the grants proposed to be made in aid of research, and that these gentlemen should be entrusted with the duty of administering any funds that might eventually be apportioned to Scotland.

After the Edinburgh deputation retired the committee took into consideration the question of the character of the Glasgow memorial. It was resolved to recommend that subscriptions be invited (1) towards the erection in Glasgow of a monument to Lord Lister and to the provision of an endowment for the equipment and maintenance of the proposed Lister museum in the Royal Infirmary, accommodation for which will be provided in one of the wards in which Lord Lister first put into practice his system of antiseptic surgery, which ward the managers of the infirmary have agreed to retain for the purpose; and (2) towards the Lister international memorial fund promoted by the London committee. Subscribers will be requested to intimate what proportions of their contributions are to be assigned to the local and to the international funds respectively, but when no such intimation is given the Executive Committee may apportion contributions to either or both funds at its discretion.

FINANCIAL DIFFICULTIES OF GLASGOW HOSPITALS.

The report submitted at the thirty-eighth annual general meeting of the subscribers to Glasgow Infirmary shows the usual features of diminishing income and increasing expenditure to meet the ever-increasing demands on the hospital. The ordinary income was nearly £17,000 short of the ordinary expenditure, and to meet this deficiency not only the whole of the extraordinary income, derived from donations, legacies, etc., left after providing for extraordinary expenditure, was used, but a further sum of nearly £7,000 had to be withdrawn from the stock account, which has thereby been reduced to £6,612, so that another similar financial year would completely exhaust the unrestricted capital account. Clearly the financial position of the infirmary is far from satisfactory, and if it is to continue to make full use of its accommodation and appliances increased financial support must be forthcoming. During the past year two beds were endowed, bringing the number of endowed beds up to forty-two. The amount of work done by the institution is shown by the fact that the average daily number of in-patients was 553.50 as compared with 529.56 last year. Almost for the first time in the history of the institution the number of outdoor patients has diminished. The department which shows the largest relative decrease is the vaccination department, where the number of patients has decreased by 16 per cent. How far the Insurance Act will affect the outdoor department is not known; but if the managers, as is expected, adopt the plan of only treating emergency cases among the insured and those requiring special treatment, and those insured persons recommended to the outdoor department by medical practitioners for diagnosis and suggestions as to treatment, the work of the outdoor departments will be materially reduced.

Another institution which is being seriously crippled by lack of financial support is the Maternity Hospital. This magnificent institution, which is doing sterling work, has already had to close the gynaecological wards, and even with the field of work thus restricted is finding it a matter of ever-increasing difficulty to pay its way. It is hoped that its funds will benefit substantially as the result of the fancy dress ball which was held last week in aid of the institution.

GLASGOW UNIVERSITY MEDICO-CHIRURGICAL SOCIETY.

Dr. James Devon delivered an address to this society in the University Union on "The Eugenist and the Rest of Us." He discussed the present eugenic propaganda, and maintained that it was impossible to put into practice under present economic conditions any reasonable system of eugenics. He deplored the fact that any body of men should, with the present limited knowledge of the laws of heredity as regards the human race, propose to take upon themselves any severe regulation of the lives of their fellow men, especially when many of the eugenists were either abstract philosophers or pure scientific investigators, with only a limited experience of the conditions of life among the lower classes of the community. Dr. Devon urged that energy should be turned towards perfecting the means of combating disease rather than towards attempts at obtaining the almost impossible ideal of a perfectly healthy community.

ABERDEEN ROYAL INFIRMARY.

The new out-patient department in connexion with the Aberdeen Royal Infirmary was opened on November 25th without any formal ceremony. The new buildings have been erected at Woolmanhill, on the opposite side of the street from the present buildings, and include casualty, dressing, skin, dental, ear, nose and throat, and medical departments.

THE SCOTTISH MEDICAL DEFENCE UNION.

The report of the council of the Medical and Dental Defence Union of Scotland, submitted to the recent annual meeting, disclosed a satisfactory position. Despite the fact that the year ending August 8th, 1912, was one of marked activity, it proved possible to carry forward nearly half the total income for the twelve months. Another satisfactory point was that while approximately ten years ago the reserve fund was only equal to 5s. 9d. a member, it has now risen to £2 1s. 8d. a member. The total membership is 1,215. There was ample evidence, the report stated, that the distinctive policy adopted by the council in dealing with claims against members and with difficulties arising out of professional practice was being increasingly recognized, and there had also been evidence during the year of the value of the services that the union rendered to members who required advice and assistance in troublesome matters, or defence in threatened actions. The claims made against members during the year against dental practitioners in particular were exceptionally numerous, but fortunately only a small number of them resulted in litigation. The council believes, however, that had the practitioners concerned in these claims been obliged to withstand them as individuals they would in many instances have had to compromise by a money payment. The council's policy in this connexion is that when a threatened action is brought before it with a view to defence, steps are taken to obtain full details, and thereafter the case is considered judicially with the object of ascertaining the probable result in the event of embarkation on litigation. Should the council be of opinion that the member's position is sound, intimation is made to the claimant that the circumstances have been carefully considered, and that the threatened action will be defended. In most cases the knowledge that the union had investigated the facts and was prepared to contest the claim was sufficient, the report stated, to deter intending litigants from proceeding further, especially as it was now well recognized that the union would not advise payment of a sum of money for the sake of settling with a troublesome litigant. The report also noted that in addition to matters involving legal considerations advice had been given in regard to many professional difficulties arising out of practice. Many of them were problems such as could only be solved by reference to a professional body, and a belief was expressed that the union had been of much service to its members in this connexion. A large number of members had taken advantage of the indemnity scheme, by which on extra

payment of a small premium full indemnification could be received against damages in actions unsuccessfully defended by the society on their behalf. With regard to the National Insurance Act the council held a watching brief. It was invited to send two delegates to confer with the Chancellor of the Exchequer on the matter, but decided instead to endorse the action of the British Medical Association.

Prevention of Blindness among Children.

The Public Health Committee of the Edinburgh Town Council at a recent meeting had under consideration Dr. Dewar's report on the incidence of ophthalmia neonatorum, and a letter from the Secretary of the Royal Blind Asylum and School, as to extending the provisions of the Infectious Diseases (Notification) Act, 1889, to include ophthalmia neonatorum. The committee agreed to make a recommendation to the effect that steps be taken to bring the disease within the scope of the Notification of Diseases Act, 1889.

Proposed Crematorium for Edinburgh.

At a recent meeting the Public Health Committee of the Town Council had before it an application from the Edinburgh Crematorium Society, asking for approval of a scheme for the erection of a crematorium in Warriston cemetery. The proposal is still at the initial stage, and the promoters are not yet in a position to give plans or details. The committee expressed approval of the general principle of the establishment of a crematorium in the city, and agreed to recommend that the Council should grant the request of the society, provided the plans submitted later are according to the regulations.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Public Inquiries in Medical Cases.

A unanimously signed protest has been forwarded by the practitioners of South Down to the Local Government Board in connexion with the general practice of holding public inquiries into the conduct of professional men. It is pointed out that the complaints are often of a frivolous character, and are made by persons unable to pay for damages for libel or slander, and thus the practitioner is left without compensation for the annoyance and expense of defending himself, added to the inevitable loss to his reputation, which even a successful defence does not re tore.

The protest also deals strongly with the custom of conducting the inquiry into such complaints in public, the evidence being fully reported in the local press, and it is pointed out that the presence of one or, at most, two members of the board of guardians at such inquiry would be sufficient to represent the interests of the ratepayers.

Representation by solicitors is also considered undesirable, and it is urged that questions involving matters of professional conduct can only be properly dealt with by a tribunal largely professional in formation.

The attention of the Board is called to the rules on this subject contained in the recently published National Health Insurance Regulations (1912), which recognize to some extent the claims mentioned. It is to be hoped that the Local Government Board will give this important matter early and sympathetic consideration. The practitioners of South Down deserve the thanks of their brethren for calling official attention to these very real grievances.

Salaries of Dispensary Medical Officers.

At the weekly meeting of the Dunslaughlin Board of Guardians a letter was read from three medical officers, applying for an increase in their salaries, owing to the very wide area of their districts, the heavy working expenses, and the fact that recent legislation and other changes have reduced their incomes, whilst increasing the dispensary work. The Board decided to convene a special meeting to consider the matter.

The Tullamore Guardians, at their last meeting, increased the salary of the medical officer of the workhouse from £125, rising by triennial increments of £5, until £150 has been reached, the increase to be retrospective. The salaries of the several medical officers of the dispensary districts in the union were also increased from £120 per annum, by triennial increments of £7 10s., until the maximum of £180 is reached after twenty-four years' service, this increase also to be retrospective.

Vaccination in Enniscorthy.

The manner in which vaccination in Ireland is being neglected at the present time was plainly shown at the last meeting of the Enniscorthy Guardians, when a letter was read from the Local Government Board requesting them to take steps to enforce strict compliance with the Vaccination Acts, and pointing out that the number of vaccination defaulters in the union district was 1,646, and that this did not include Enniscorthy, where the number was not stated. The guardians have a resolution on their books refusing to enforce the vaccination laws, and they made no order, evidently treating the letter of the Local Government Board as a joke, one member remarking that the number of defaulters in Enniscorthy must have been too large to ascertain.

Dublin University Biological Society.

At the opening meeting of the thirty-eighth session of the Biological Society, held in the Graduates' Memorial, Trinity College, Dublin, Dr. W. Geoffrey Harvey delivered his inaugural address, in which he dealt with Roentgen rays in medical diagnosis. He spoke of the subject from the physician's point of view, omitting from consideration all such purely surgical cases as were of traumatic origin, and all tumours, except in so far as, for diagnosis, they fell within a physician's sphere. In pulmonary tuberculosis radiographic findings were, he said, more valuable and accurate than either percussion or auscultation. The abdomen, he considered, was the field in which the *x* rays would eventually, if they had not yet done so, prove of greatest value to medical and surgical diagnosis in investigating the digestive and genito-urinary tracts. He insisted strongly on the necessity for correlating clinical with radioscopic findings. A discussion followed, in which Mr. A. E. Barclay, Mr. Richard Burrell, Professor J. Joley, and Dr. J. F. Wigham took part. A large number of members and guests were entertained afterwards at a smoking concert given by Dr. Arthur Ball, the outgoing President of the Society.

Dublin University College Medical Society.

The inaugural meeting of the third session of the Medical Society in connexion with University College, Dublin, was held last week in the Great Hall of the College, Stephen's Green, Dublin. The President, Dr. Denis J. Coffey, presided, and there was a large attendance.

Professor B. Collingwood, M.D., read a paper on some recent investigations into the coagulation of the blood and their practical application. More than one of the speakers deplored the great want in Dublin of endowment for research work of any kind, without which progress is almost impossible.

Oysters and Typhoid.

The City of Cork has been rejoicing in the fact that the number of cases of typhoid fever which occur annually has been steadily diminishing since 1908, when there were 88 cases; in 1909 there were 74 cases; in 1910 there were 54 cases; and in 1911, 32; and this year to date 23 cases. Within the last few weeks, however, 6 cases have been reported by the medical officer of health, and several of the cases have been attributed to eating oysters which have been taken from beds in the river. Dr. Donovan has recommended that samples should be taken from the exposed areas and submitted to bacteriological examination; that the sale of shellfish from such areas be stopped; that the fishmongers of the city be warned of this impending peril, and advised to use due precautions in the purchase of shellfish from doubtful sources; and that all shellfish found exposed for sale taken from contaminated areas should be seized and condemned.

New South Wales.

[FROM OUR SPECIAL CORRESPONDENT.]

MEDICAL INSPECTION OF SCHOOL CHILDREN.

SYSTEMATIC medical inspection of school children in New South Wales has been in force for nearly five years, and the report of the fourth year's work has now been issued. It states that 144 schools, comprising 255 departments, with an enrolment of 67,577 pupils, were visited by the medical inspectors. Of the total number of pupils, 16,909, or 25 per cent., were presented by the teachers for medical inspection on account of some physical defect; and of these children, 4,848, or 28 per cent., were found to be suffering from defects of vision; 5,750, or 34 per cent., were returned as suffering from post-nasal trouble; 2,025, or 13 per cent., from throat trouble; 651, or 3 per cent., from very defective teeth; 487, or 2 per cent., from swollen glands; and 1,509, or 8 per cent., from either defective hearing or ear trouble. These percentages refer only to children presented to the school doctors as defective cases. Of the enrolment of the schools visited, 7.2 per cent. were found to have bad sight, 8.5 per cent. had nasal trouble, 3.7 per cent. had throat trouble, and 2.2 per cent. defective hearing or ear trouble. The number of cases where action was taken by the parents on the medical inspector's advice has increased during the last two years from 25 to 36 per cent. But Dr. Grace Boelke, one of the medical inspectors, emphasizes the apathy which still exists among parents in regard to having their children placed under medical treatment. She remarks that parents do not take action and have their children's ailments remedied, because there appears to be a rooted conviction among a large number of people that these ailments are trifling and that the children will "grow out of them." Such an attitude is a stumbling-block to treatment, and, so long as attention to these defects cannot be legally enforced, a certain proportion of physically defective children will continue to be added to the population.

FRIENDLY SOCIETIES IN NEW SOUTH WALES.

Some idea of the extent of the operations of the friendly societies in New South Wales can be gathered from the annual report of the acting registrar of friendly societies. Only a few new societies were established during the year, but the number of branches has greatly increased. At the end of 1911 there were 1,769 branches on the register, being 134 higher than 1910. Of these 547 were in the metropolitan area, and 1,222 were in the country districts. The membership of the societies has increased from 149,442 to 164,780, and it is estimated that about 650,000 people in this State are sharing, to some extent, in the benefits provided by friendly societies. The earliest age at which members are admitted to full membership is 16 years of age, and as the male population above that age in April, 1911, numbered 571,000, one in every five of them was a member of a friendly society. The total amount disbursed annually on account of benefits now amounts to over £320,000.

A TUBERCULOSIS DISPENSARY.

The New South Wales Branch of the National Association for the Prevention and Cure of Tuberculosis recently approached the Government with a view to obtaining financial assistance towards the equipment and maintenance of a tuberculosis dispensary. The Government made a grant of £500, and subsequently Mrs. Walter Hall presented them with a similar amount. After some delay suitable premises were secured, and operations have recently been commenced. The institution is open on two evenings and one afternoon a week. A nurse is being employed to visit the homes of the patients who present themselves at the dispensary, in order to instruct the inmates in the precautions necessary to prevent the spread of the disease. Sir Philip Sydney Jones, M.D., is the president of the institution, and the physicians in attendance at the dispensary are Drs. P. Boelke, F. G. Griffiths, G. L. O'Neill, and Zlotkowski.

THE LANDING OF DEAD BODIES.

The Quarantine Act of 1903 confers upon the Minister of Customs power to prohibit the importation into the Commonwealth of any articles which, in his opinion, are likely to introduce any infectious or contagious disease. As it has been suggested that this might be done by means of dead bodies, a proclamation has been published in the *Commonwealth Gazette* to the effect that the Governor-General, acting on the advice of the Federal Executive Council, has prohibited the importation into Australia of the body of any person whose death was due to quarantinable or other infectious or contagious disease. It is further set out that the importation of all bodies is prohibited unless they are accompanied by a properly attested copy of the official certificate of death, and by a certificate from the health authority of the country from which they are brought to the effect that death was not due to an infectious or contagious disease. In all cases bodies must be enclosed in a strong and securely made coffin hermetically sealed.

Correspondence.

THE ORIGIN OF LIFE.

SIR,—On reading Dr. Charlton Bastian's paper, one question rises to my mind with reference to the appearance of organisms in his carbon-free silica solutions—Has he tried drying and heating them to a dull red heat to see if they char? If so, the solutions cannot be carbon-free, and must be contaminated, or silicon has been transformed into carbon.—I am, etc.,

University College, Cork, Nov. 30th. MARCUS HARTOG.

THE DIAGNOSIS AND TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS.

SIR,—I have read Dr. Lees's instructive and illuminating lecture in the JOURNAL of November 9th, and would strongly recommend its careful perusal to every physician interested in the treatment of this deadly disease. There is only one way of establishing a diagnosis in incipient pulmonary tuberculosis, and that is by careful physical examination, especially percussion, as indicated by Dr. Lees, and as the future of the patient largely depends on the conclusions arrived at during the earliest stages, the importance of accurate investigation by purely physical methods cannot be over-estimated. It is only a short time ago that it was confidently proclaimed by several leading authorities that from 90 to 95 per cent. of the human race were affected in some way or another by tuberculosis, and as the great majority were presumed to have suffered from the pulmonary variety, the conclusion is inevitable that what is sometimes called the purely "scientific" method of investigation must have been responsible for such unwarrantable conclusions. Many, indeed, avowed that their opinions were based on the results obtained by the use of one or other of the tuberculin "tests," then accepted as reliable by a large proportion of physicians, but whose absolute worthlessness is now acknowledged by most experienced clinical practitioners.

The whole subject of pulmonary tuberculosis appears to be in a chaotic state, especially as regards treatment, and the present time appears to be opportune, when so much public money is about to be spent on the prophylaxis and treatment of this disease, for a thorough scientific inquiry into the various methods of cure now in vogue. This would appear to be imperative in the interests of the profession itself, for apart from the vital importance of ascertaining the best and safest treatment for such an extremely common disease as phthisis, it has to be admitted that the periodic exhibitions of pulmonary neurasthenia, in the shape of letters to the medical journals upholding the virtues of the many specifics, do not add exactly to the dignity of medicine or enhance its reputation as a scientific calling.

I believe much of the confusion that exists could be avoided by a thorough trial and systematic use of the method of treatment by continuous inhalation so successfully employed by Dr. Lees and many others, and from my own experience I can say unhesitatingly that better results are obtained than by any other procedure. It has also the great advantage of being safe (which is more than can be said for tuberculin and many of the other so-called specifics), easy to use, and very inexpensive. Recently I had two failures in succession, but they were both native Egyptian women who had already been subjected to various forms of treatment without obtaining any benefit.

In another case recently treated the results have been very remarkable. The patient was an army officer sent out here on special duty on account of his health. He had all sorts of treatment, including tuberculin, but was gradually getting worse in every way, and the haemorrhages from which he suffered were at times alarming. At my suggestion the army medical officer, under whose charge he was, used the continuous inhalation treatment (the formulae being the same as that recommended by Dr. Lees, except that spt. vin. rect. was used instead of spt. aeth.). His condition improved from the very beginning, and he now weighs 23 lbs. more than before the commencement of the treatment. There has been no haemorrhage or other bad symptom, although the patient remained in Cairo during the summer. The result, in this case, could not be ascribed to the incomparable Egyptian climate, as this officer had been in the country for a considerable time before undergoing the inhalation treatment, during which time his condition was getting gradually worse. —I am, etc.,

T. GERALD GARRY, M.D., M.AD.

Cairo, November 24th.

RESULTS OF OPERATIONS ON TUBERCULOUS JOINTS.

SIR,—The highly interesting and very valuable contribution in the issue of your JOURNAL of November 16th, by Mr. Harold Stiles, does not, to my mind, afford encouraging evidence as to the value of radical measures in the treatment of tuberculous disease of the joints.

When one of the admittedly most skilled and able of British surgeons can only point to a percentage of thirty good results, has a mortality of 12 per cent., and has to perform amputation in 10½ per cent. of those cases selected for radical treatment, one cannot but fear what the results would be in the hands of those less skilled and less experienced.

I think no more favourable argument for the extreme desirability of adopting conservative methods in the treatment of tuberculous arthritis could be advanced than is presented by this paper. With Mr. Stiles I most cordially agree that half-hearted measures are the reverse of beneficial, but I do feel that conservative treatment skilfully applied will give results which radical measures cannot approach.

A summary of the results of conservative treatment of surgical tuberculous lesions as applied at Alton, appeared in the *Lancet* of August 10th, 1912, and though these figures extend over only barely four years they form a contrast which may be not without interest.

I had hoped that others would comment on Mr. Stiles's paper, but the absence of correspondence and the extreme importance of the subject impels me to draw attention to a matter which so vitally concerns the interests of those afflicted with surgical tuberculosis.—I am, etc.,

H. J. GAUVAIN.

Alton, Dec. 2nd.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—I am much interested in the letter of "Assistant Medical Officer" in your last issue. As he puts it, "There is a great and increasing difficulty in obtaining candidates for the above positions." There are many reasons for this state of affairs, and some of these are outside the service.

I do not wish to be classed among the grumblers. Those of us who have lived in asylums for several years know the conditions of service. We entered the service under those conditions, and we must not grumble because we cannot have things all our own way. Nevertheless, there are ways of mending the present state of affairs. Reform is needed.

If "Assistant Medical Officer" is a member of the Medico-Psychological Association, he surely knows that this association is at present considering "the status of psychiatry as a profession in Great Britain and Ireland and the reforms necessary in the education and conditions of service of assistant medical officers." He will find a report of a special meeting of the association in the *Journal of Mental Science* for January, 1912, and if he is not a member I will be happy to lend him my copy. It is evident that we assistant medical officers have friends in the Medico-Psychological Association. At the same time the Medico-Psychological Association may not be sufficient for the needs of assistant medical officers. Many assistant medical officers cannot attend the meetings, as their superintendents are there, and the assistant medical officer must in many cases stay at home. Grievances cannot be ventilated under these circumstances. Hence I and several other assistant medical officers have for a long time advocated a society for assistant medical officers.

Until lately we have received little encouragement. Assistant medical officers are apathetic. They do not care to do or say anything that may prejudice them in the eyes of their medical superintendents or committees. If they are seniors, they hope to be made superintendents; if they are juniors, they wait to see what will turn up. There are signs, however, that there will some day be such a union of assistant medical officers. We at present await with loyalty and respect the action of the Medico-Psychological Association.

If it should be unable to help us, we must help ourselves. In that case the first thing to do will be to form a society, and the next to proceed to educate committees. Asylum committees are not all so bad as some medical officers seem to consider them. They require to be shown our position in a polite and proper manner. They do not know much about us, I am sure. There are many reasonable and sympathetic men on asylum committees. An enthusiastic superintendent or an energetic medical officer can, I have no doubt, work wonders with them. If they see that assistant medical officers are not merely birds of passage, that they wish to be enthusiastic and loyal and hope for recognition, much will follow.

I cannot help thinking that the reason that some of us suffer is that we are unknown. We hold the trump cards in our hands. There are amongst us future medical superintendents. Let us enlist their sympathy. Let us go forward with hope and determination, and all will be well. Union is strength.—I am, etc.,

W. J. ADAMS ERSKINE.

City Asylum, Nottingham, Dec. 2nd.

BLEEDING AND BLISTERING.

SIR,—The professional question which Dr. F. de Havilland Hall has raised in his letter is in my humble opinion of considerable importance. Two well-known textbooks, Thomson and Miles and Dr. Frederick Taylor's works, do not give the profession to understand that bleeding and blistering are barbaric or antiquated methods of treatment. On the contrary, I gather from perusing these manuals that bleeding and blistering find a place in surgery; and Dr. F. Taylor, in recommending the practice of bleeding in various affections, very clearly points out in diseases of the heart producing dilatation the symptoms indicate bleeding. Referring to dilatation of the right heart, in the ninth and last edition, page 608, he says:

> The withdrawal of blood to the extent of 10 or 12 oz. by an opening in the basilic or external jugular vein at once relieves the engorged condition of the right ventricle, which can again contract efficiently upon its contents, while time is given for the action of diuretics, purgatives, and the special drugs which will be shortly mentioned.

And may I be allowed to remark that Dame Nature from all time has ordered a periodic flux of blood among the members of the feminine sex? The great Harvey has pointed this out in his writings. In practising bloodletting, then, we imitate Nature as in critical discharges of blood from the nostrils and the head, the thorax, and the abdominal cavities.

Several years ago I wrote a series of papers in the *Clinical Journal* on the Practice of Bloodletting, discussing in detail the whole matter from its usefulness to its abuse. If the future success of the practitioner is to be decided by his diagnostic skill, I know no head, thoracic, or abdominal operative procedure requiring such consummate practice and judgement as that of bloodletting, for is not the practitioner suddenly brought face to face with all the working forces of the body and their blood supply? —I am, etc.,

JOHN FREDK. BRISCOE.

Alton, Hants, Nov. 16th.

ANTIVIVISECTION IN GLASGOW.

SIR—I am glad to see Sir Frederick Treves's letter in your issue of November 30th, as I was puzzled to understand what the "context" could be which I was charged

with having omitted. Now that Sir Frederick Treves has supplied it, I think every unprejudiced reader will perceive that the quotation I made is really independent of it. It is my method, on the platform, to supply facts and not opinions. I think every antivivisectionist knows that Sir Frederick Treves upholds vivisection, and I invariably announce that fact as I did in Glasgow.

My point is that vivisection is an unscientific practice, inasmuch as we cannot argue from animals to man. It is in this connexion, and in this connexion alone, that I quoted your correspondent as an expert in a particular feature of abdominal surgery, namely, that of intestinal suture, and, as you yourself noted, I quoted other famous surgeons in regard to other features concerning which they could speak with equal authority.

The fact that Sir Frederick Treves is a believer in vivisection adds weight to his testimony that "such are the differences between the human and canine bowel that when he came to operate upon man he found that he was much hampered by his new experience, that he had everything to unlearn, and that his experiments had done little but unfit him to deal with the human intestine." His letter proves conclusively that I quoted him "fairly and squarely," and did not omit a single word of what he said upon the subject.

He says I ought to have added a remark he made in the *Times* four years later, to the effect that he "was keenly aware of the great benefits conferred upon suffering humanity by certain researches carried out by means of vivisection." But that was merely an expression of opinion upon "certain researches" which he failed to specify, otherwise I should have been prepared to answer him. What he did definitely specify I quoted in full—namely: "Speaking of suturing of intestine, I said that I had found that operations upon the intestines of dogs were useless as a means of fitting the surgeon for operations upon the human bowel." This expression fully bears out Professor Starling's dictum that "the last experiment must always be on man."

Sir Frederick Treves must excuse me if I place more reliance upon his facts derived from his own practical personal experience than I do upon his opinions in regard to the unspecified "researches" of others.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President of the British Union for the Abolition of Vivisection.

Gloucester, Dec. 1st.

THE HEREDITY OF LEPROSY.

SIR,—In his memorandum on the Contagiousness of Leprosy, in the JOURNAL of November 16th, p. 1386, Dr. C. R. Maitland Pattison refers incidentally to the heredity of the disease. In their report (1893) the Leprosy Commissioners in India came to the conclusion that leprosy was not hereditary, and since then further evidence has been forthcoming in support of the correctness of that conclusion. There is a very good reason for calling attention to the matter here, as Europeans who have contracted leprosy will be unnecessarily disturbed in their minds if they come across Dr. Maitland Pattison's memorandum.—I am, etc.,

GEORGE PERNET, M.D.,
English Editor of *Lepra* (the International Journal for Leprosy).

London, W., Nov. 30th.

CRIMINAL HEREDITY.

SIR,—In the JOURNAL of November 30th, p. 1568, you quote some remarks of the late Sir William Gairdner that "the Tasmanians were remarkably free from all such apparent reversions" of inherited instincts—that is, criminal. The following figures taken from the Transvaal census of 1904 may be of interest:

The proportions per 10,000 living males in prison:

Whites born in the Transvaal	...	7.42
,, ,, Britain	...	80.64
,, ,, Europe	...	72.59
,, ,, America	...	305.74
,, ,, Australasia	...	97.90
,, ,, Asia	...	6.34

The best behaved were white men born in Asia mostly of British parentage.

Some of these Australasians may have been born in Tasmania, the majority came from Australia.—I am, etc.,

GEO. TURNER,
Late Commissioner for Transvaal Census, 1904.

December 2nd.

NEW DRUGS.

SIR,—I hardly think that Dr. Stephens's letter in last week's JOURNAL (p. 1582) requires an answer from me. He must surely know that inorganic salts which are absorbed act in proportion as they ionize, and that calcium iodide exerts the action of the calcium ion and the iodide ion; and so with the second substance he claims to have introduced into medicine. One can, of course, ring the changes with these salts indefinitely without producing anything new therapeutically. They are different combinations of ions, of which the action of each has long been known and more or less thoroughly investigated. One simple example will make my meaning clear: quinine nitrate might be introduced as a new drug, and I suppose we should all regard the claim as ridiculous, but if it were introduced as a new and for physical reasons superior method of administering quinine, it might possibly deserve our respectful attention.—I am, etc.,

W. E. DIXON.

Cambridge, Dec. 3rd.

PROGRESSIVE LENTICULAR DEGENERATION.

SIR,—In your generously appreciative editorial of this week on my work on progressive lenticular degeneration, regret is expressed that the name proposed for this new nervous disease leaves out reference to the cirrhosis of the liver, which is, there can be no doubt, an essential part of the malady. May I be allowed to remark that my chief reason for not including that element of the affection in the title is that there are no symptoms during life referable to the hepatic cirrhosis? Clinically, as far as I have seen, the symptoms are exclusively nervous, and this being so, a neurological nomenclature appears to me desirable. Further, unless some shorter yet equally inclusive title for the disease can be suggested—and I should be only too delighted if it were—I am loth to add to its already somewhat lengthy denomination.—I am, etc.,

S. A. KINNIER WILSON.

London, W., Dec. 2nd.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—H. B. Carlill.
M.B.—W. H. Camm, D. Embolton, A. H. Gosse.
B.C.—W. H. Camm, A. H. Gosse.

UNIVERSITY OF LONDON.

Proposed Club.

A MEETING was held at the university on Foundation Day (November 28th), the Principal, Sir Henry Miers, presiding, to consider the question of establishing a club for graduates, teachers, and officers of the university. In the letter convening the meeting it was stated that the Senate, while disapproving of the formation of a social club of which men and women undergraduates could become members, would welcome the establishment of a club for graduates, teachers, and officers, and would be prepared to consider an application for an annual subvention if the premises provided satisfactory accommodation for the meetings and business of undergraduates' societies and for other university purposes. A resolution moved by Mr. Wickham Hurd, LL.B., proposing the establishment of a club on the general lines approved by the Senate, was carried unanimously, and a committee was appointed to consider the best means of carrying the resolution into effect, with instructions that the club should be a members' club in preference to a proprietary club. The committee is to report to another general meeting. It was generally considered that the annual subscription should be moderate, and that every effort should be made to meet the requirements of provincial members, of whom it was hoped that a large number would join. The committee was, however, requested to consider and report on various schemes.

The Reitlinger Prize.

The Paul Philip Reitlinger Prize, offered this year for an essay embodying the result of some research work on a medical subject, has been awarded to Frederick James Fitzmaurice Barrington, M.S., University College Hospital Medical School, for an essay on The Innervation of the Bulbo-urethral Glands, and their Histological Changes during Activity. The prize, which is of the value of £30, was founded with funds given to the university by Mr. Albert Reitlinger in memory of his son, a student of St. George's Hospital Medical School, who died on December 3rd, 1911. Next year the prize will be awarded for the best essay on the influence of the conception of evolution on moral or social philosophy.

Medico-Legal.

AN UNQUALIFIED PRACTITIONER.

ON November 23rd Mr. Dickinson, at the Thames Police Court, heard a charge preferred at the instance of the Medical Defence Union against one Ernest Alfred Edwards. It was alleged that the accused had unlawfully used the title "Doctor" in contravention of the Medical Acts, 1858 and 1886.

Mr. Bodkin (instructed by Messrs. Hempsons) prosecuted.

It appears from the report in the *East End News* that at a recent inquest the accused was called as a witness, and it was in consequence of a recommendation of the jury that proceedings were instituted. He had a card in his window which read "Dr. E. Edwards, M.C.S." Two witnesses had gone to the surgery. One of them, a Mrs. Cohen, saw the defendant, who diagnosed chest trouble and gave her medicine and pills. He used a stethoscope. The other witness, Mr. Tyrrell, said that "Dr. Edwards" told him he was suffering from bronchitis and bronchial catarrh, and that his bronchial tubes were closed, although witness had not even a cold. He charged 1s. for certain medicine and 1d. for the bottle.

The defendant denied having practised as a doctor. He had drawn teeth and had given medicine, but always reported a serious case to a doctor.

In cross-examination he said that although he had seen Mr. Gardner, whose death was inquired into at the inquest, he had diagnosed him as normal, although he died of syncope following pneumonia. He had had a doctor (Dr. Nunn) staying at his house, and it was he who invented the title M.C.S., telling him it meant Massachusetts College of Surgeons. He did not know Dr. Nunn's Christian name or initials.

Mr. Dickinson said it was quite clear what the defendant's intention was—clearly it was to make people going to him believe that he was a duly qualified practitioner. He now asked: Would the defendant admit that he was not such?

Defendant: Yes.

In the event Mr. Dickinson said the practice was very mischievous, and to prevent others following the defendant's example he would fine him £10 and £5 costs.

CERTIFICATES GIVEN BY MEDICAL WOMEN.

IN a nullity case now pending an order was obtained for the wife to be medically examined. The court at first refused to accept a report from a woman doctor, but after argument on behalf of the Men's Society for Women's Rights, which has taken the case up, that a report from a woman doctor was in accordance with the requirements of the law, the court agreed to accept the reports of two women doctors nominated by the court. The objection must have rested on some misapprehension of the Medical Acts; under them all registered practitioners have the same status irrespective of sex.

NURSE'S LIBEL ACTION.

A MATERNITY nurse in the employment of the Board of Guardians of the Balrothery Union claimed £500 damages for libel from a lady living in the neighbourhood, who wrote to the guardians stating that there were great complaints amongst the poor about the way the nurse attended her cases. In addressing the jury after evidence on both sides had been heard, the Judge said that it was the duty of any person in the community to call the attention of the proper authority to any neglect of duty by any person in a public position. The plaintiff, according to the excellent report of the medical officer, had discharged her duty with admirable care, but it did not always follow that a patient was satisfied with either her doctor or her nurse. The plaintiff had been completely exonerated from any blame by the guardians, and her character had been cleared beyond question. He was obliged to declare that the plea of privilege was well founded and that the verdict should be for the defendant, but he thought, having regard to all the circumstances of the case, that the defendant should pay the costs of the action.

A SWALLOWED TOOTH.

THE First Division of the Court of Session gave judgement on November 26th in an application for a new trial, in which Harry L. Richardson sued William Wallace Dickie (dentist), Glasgow, for £1,500 damages. The pursuer alleged that on February, 1908, the defender allowed a portion of a tooth to fall down the pursuer's throat into his right lung; three years afterwards, during a paroxysm of coughing, he coughed up the tooth. Fault was denied by the defender. At the trial in March last a jury under Lord Ormidale returned a verdict for the pursuer, and assessed the damages at £750. The defender asked for a new trial on the grounds that the verdict was contrary to evidence, and that the damages were excessive. The Division (Lord Johnston dissenting) refused the application for a new trial. Lord Johnston was satisfied that the defender had suffered an injustice, and that the verdict was not only a bad one, but that it was given in circumstances which called for a new trial, and he thought he was bound in fairness to the defender to say so.

ATTENDANCE BY REQUEST.

S. W. writes that some time ago a lady telephoned to him to call on her sister and afford professional assistance, and later asked him to procure a consultant. Neither he nor the consultant have been able to get their fees. He wishes to know what remedy he has.

*** The difficulty in this case is to know whether the lady who telephoned was acting for herself or only as agent for her sister. In the latter instance the sister only would be liable. Again, if the former intended to take on herself any liability, was it simply that of guarantor, or did she intend to take on herself the whole liability? In the former case, to enable our correspondent to recover, it would be necessary, in accordance with the Statute of Frauds, that she should have given a written guarantee. In the latter, no written guarantee would be necessary, but it would be requisite for the doctor to show that when he was asked to attend the case it was clearly implied that the attendance was to be at the cost of the person making the request. Unless the lady who telephoned clearly gave our correspondent instruction to attend her sister at the former's cost, his only remedy is against his patient.

The Services.

LONDON VOLUNTARY AID DETACHMENTS.

THE inspection report of Colonel Valentine Matthews, County Director of the Territorial Force Association of the County of London, shows that on October 31st seventy Voluntary Aid Detachments, with a *personnel* of 1,980, had been registered. Some are efficient and well organized, while others are merely small classes of first aid and home nursing with no particular organization. Few are possessed of any equipment beyond a small quantity for instructional purposes. All commandants, it is remarked, should possess copies of the War Office scheme for the organization of voluntary aid in England and Wales, though it is true that neither from that publication nor from the War Office can they obtain a definite idea as to the probable duties of the detachments raised in London. Women's detachments should devote their energies little to first-aid work, much towards acquiring a practical knowledge of nursing. All members of all detachments should be able to cook to some extent, and one or two members should aim both at special proficiency in cooking and at ability to improvise fireplaces and utensils. Detachments mentioned as apparently efficient and working on the right lines are those of the Chelsea, Camberwell, Kensington, Marylebone, Greenwich, and Woolwich Divisions, and the Women's Sick and Wounded Convoy Corps, and the Jewish Women's Divisions of the British Red Cross Society.

Obituary.

GEORGE CHRISTOPHER TAYLER, M.D.,

TROWBRIDGE.

DR. G. C. TAYLER, of Trowbridge, died with tragic suddenness on the morning of November 23rd, at the age of 67. He had previously appeared to be in the best of health and was fully engaged in work, but was seized with an attack of angina in his consulting-room, and passed away within twenty-four hours. He was the *doyen* of the medical profession in the district in which he practised, and his loss is keenly felt by his colleagues and the public at large.

Dr. Tayler commenced his medical career early, being apprenticed to his father at the age of 14. He matriculated at London University in 1862; obtained his medical training at St. Bartholomew's Hospital; took the degree of Bachelor of Medicine and the diplomas of the colleges in 1866; and passed to the degree of Doctor of Medicine in 1871. The career thus early begun was strenuously followed during the remainder of his life. Shortly after leaving the university he joined his father in practice in Trowbridge, and at the time of his death was senior partner in a firm which included his brother, Dr. H. P. Tayler, of Bradford-on-Avon, and two sons. Besides carrying on an extensive private practice, Dr. Tayler held at some time the position of M.O.H. to the Trowbridge Urban District Council, Medical Officer to the Trowbridge and Melksham and the Westbury and Whorwellsdown Unions. His practice was a very wide one; he worked early and late with unfailing cheerfulness, devoted himself with equal assiduity to poor and rich, and was one whose experience and wisdom were widely sought. In addition to his work he was an ardent member of the British Medical Association and a past-president of the Bath and Bristol Branch; he was the first chairman of the Trowbridge Division, and was seldom absent from a Divisional meeting.

In private life Dr. Tayler was a man beloved of all who were brought into contact with him. A man of simple tastes, of unassuming modesty, of generous and unselfish nature, his counsel was sought by many, and his hand

was ever ready to help without ostentation those who were in need. He died as he would have wished to die, "in harness"; he has passed, "his soul well knit and all his battles won"; and he has left behind him a career of unsullied reputation, an example of professional integrity, and the fragrant memory of a good man. J. P.

GEORGE FREDERICK ROUMIEU, M.A., J.P.,

CORONER FOR WEST SURREY.

THE profession in West Surrey has heard of the death, at the age of 61, of Mr. George Frederick Roumieu with much regret. He was a man of fine physique, but fell a victim to cancer. He was born in Kent of Huguenot stock and had lived in Farnham for fifty years. He was educated at Christ College, Finchley, and Jesus College, Cambridge. He took his degree in 1877 and was called to the Bar in 1880. He had been coroner for West Surrey for thirty years. He had made many friends amongst all classes, and especially amongst members of the medical profession. He was essentially a doctor's coroner. When President of the Coroners Society he worked hard, though unsuccessfully, to get the Coroners Act amended, in order that honorary medical officers to institutions might receive fees for making *post-mortem* examinations and for giving evidence at inquests. He, further, always showed his interest in and sympathy with the profession in never allowing a jury to criticize a medical man's actions. When any juryman took it upon himself to suggest that the doctor should have acted otherwise than he did, his invariable remark was, "Gentlemen, your duty here is to determine the cause of death and not to criticize the action of a member of a noble and self-sacrificing profession." A man of pronounced opinions, to which he fearlessly gave expression, his nature was genial to a degree. He was given to much hospitality, and was often embarrassingly generous to his friends. A keen sportsman, a good shot, and one who could throw a fly for salmon or trout with any one, it was a great pleasure to him to entertain his friends at some country house in Scotland or the North of England during the shooting season.

He led a busy life, as besides his professional work he had many hobbies, and was associated with many business concerns. He was twice President of the British Dairy Farmers Association, and for many years he acted as judge at the Royal and other shows of Dexters and Kerrys. He was a director of Welfords, Ltd., and of several local companies in Farnham. A born gardener, he had recently taken to market gardening as a hobby, and though the venture was doubtless not a great success commercially, he was content if it paid for the labour he employed. He was for many years a county magistrate, a member of the board of guardians, the rural district council, the urban district council, chairman of the parish council and the Farnham Joint Isolation Hospital Committee. He had done much work as a Freemason as a younger man, having twice held the position of Warden in the Province of Surrey, and at the time of his death he was M.E.Z. to the Cable Chapter. He leaves a widow and a brother, the Rev. J. J. Roumieu of Reigate, besides a host of friends, to mourn his loss.

JAMES C. COX, M.D.EDIN.,

LATE PHYSICIAN TO THE ROYAL PRINCE ALFRED HOSPITAL, SYDNEY, N.S.W.

DR. J. C. COX, whose death occurred in Sydney a short time ago, was one of the oldest practitioners in New South Wales. He was born at Mulgoa, some thirty miles from Sydney, in 1834. Early in life he showed great love for natural history, and it was this inclination that determined his father to put him into the medical profession. At that time the aboriginals were very numerous around his father's station, and he thus acquired a knowledge of their language and the native names for many of the indigenous fauna—a knowledge which stood him well in later years when he was associated with the Australian Museum. He was educated at the King's School, Parramatta, and also at the Sydney Grammar School. He was then articled to a Sydney surgeon, the fee paid being £300. As a medical student he attended the practice of the Sydney Infirmary, and was present to assist the late Dr. Allevne in the performance of the first operation under chloroform in Australia. He then proceeded to Edinburgh University, where he took the degree of M.D. He returned to Australia in 1858, and almost immediately was called upon to perform a very serious operation upon the late Dr. McEwen, and the success of this operation was the beginning of a very successful professional career.

It is believed that he was the oldest Freemason in Sydney, his membership dating back to the time when he reached his majority. He was also the oldest member of the Australian Club, and a few years ago he was entertained at dinner by the club in honour of the fiftieth year of his membership. On that occasion he made an interesting speech in which he recalled many incidents in the early history of the colony. Dr. Cox was the first lecturer on the principles and practice of medicine in the University of Sydney, and was physician to the Royal Prince Alfred Hospital. These positions he resigned some twelve years ago. He was also for many years chief medical referee of the Australian Mutual Provident Society, a position he only resigned last year.

Dr. Cox was equally well known for his interest in Australian history and natural science. He was president of the first New South Wales Board of Fisheries, and was well known as a conchologist. He was also president of the trustees of the Australian Museum.

Dr. Cox married three times, and is survived by his widow, two sons, and six daughters, one of whom is now the Countess of Lindsey. He was buried in his native town of Mulgoa, the funeral being attended by a large number of representative medical and scientific men.

ONE of the few remaining members of the medical profession who took part in the Crimean war passed away last week in the person of Dr. GEORGE WHITFIELD SPARKE, of Mansfield. Dr. Sparke, the son of a surgeon in the Royal Navy, was born in 1829, and eventually became a student of St. Thomas's Hospital, where he took the M.R.C.S. in 1853 and the L.S.A. in the following year. Almost immediately afterwards he joined the army in the Crimea as assistant surgeon in the Royal Artillery, and served with the batteries to which he was attached before Sebastopol and elsewhere until the end of the war. For these services he was awarded the British Crimean medal with clasps and also the Turkish medal. A few years later he settled down in Mansfield, where he acquired a considerable practice, holding appointments under the Poor Law and as Government inspector of recruits and pensioners. He had some taste for surgery, and it was largely due to his energies and influence that the Mansfield Woodhouse Hospital, which serves a large colliery district, was established some thirty-five years ago. At one time he was its senior surgeon. He also took an interest in the auxiliary services, and at one time held a commission in the Volunteer Battalion of the Derbyshire Regiment. He retired from practice a good many years ago, but continued to live in the neighbourhood.

Medical News.

DR. F. E. FREMANTLE, M.O.H. for Hertfordshire, has been chosen as one of the Unionist candidates for the parliamentary representation of Stockport.

THE President, Dr. Morgan Dockrell, and Council of the London Dermatological Society, will hold a conversazione at 49, Leicester Square, W.C., on Saturday, December 7th, at 8 p.m.

THE thirteenth annual West Somerset medical dinner will be held at the London Hotel, Taunton, on Tuesday, December 10th, at 7 p.m. The charge will be 6s. a head, exclusive of wine. Guests may be invited.

AT the meeting of the Pharmaceutical Society of Great Britain, to be held at 17, Bloomsbury Square, on Tuesday, December 10th, at 8 p.m., Dr. Owen T. Williams, Lecturer in Pharmacology at the University of Liverpool, will read a paper on cod-liver oil, illustrated by lantern slides, and Mr. W. Harrison Martindale, Ph.D., a paper on digitalis assay.

AMONG the lectures to be delivered at the Royal Institution before Easter is a course of six on heredity of sex and some cognate problems, by Professor W. Bateson, Fullerian Professor of Physiology. The Friday evening meetings will commence on January 17th, when Professor Sir J. J. Thomson will deliver a discourse on further applications of the method of positive rays.

IT is stated that five sets of apparatus for the cremation of dead bodies have been imported into Servia for use on the battlefields.

AN antityphoid vaccine laboratory has recently been established at Nancy. Professor Chantemesse's vaccine is to be employed.

A DESCRIPTION of the diagonally compensated braking system on all four wheels is contained in an Album for 1913 issued free by Argylls, Limited, Alexandria, Dumbartonshire.

THE first meeting of the Southport Medical Society for the current session took place on November 27th, when Dr. W. A. Mackay, the new President, delivered an address on modern methods of diagnosis.

THE next meeting of the Hunterian Society will be a clinical and pathological evening, which will be held on Wednesday, December 11th, at 9 p.m., at St. Bartholomew's Hospital, by kind permission of the authorities.

EXCELLENZ PROFESSOR CZERNY, of Heidelberg, celebrated his 70th birthday on November 19th. A street in Heidelberg has been named after him, and his old pupils have subscribed for a bust to be placed in the Samariterhaus.

As a result of the collections made on Queen Alexandra Day last summer a sum approximating £11,000 has been distributed between some sixty-five charities of a medical kind doing their work in or for London. The sums awarded ranged from £300 downwards.

THE annual meeting of the London Cremation Company will be held at the offices of the company, 324, Regent Street, W., on Thursday, December 12th, at 3 p.m. The report to be presented states that during the twelve months under review 592 cremations were carried out at Golder's Green, as against 531 for the preceding twelve months, being an increase of 61.

A DINNER, followed by a meeting of the Association of the Fellows of the Royal College of Surgeons in Ireland, was held on Wednesday, November 27th, at the Hotel Cecil, London. Lieutenant-Colonel Adye-Curran, President of the association, who was in the chair, said that the objects of the society were (*a*) to further the welfare of the College, and to safeguard the interests of its graduates; (*b*) to ensure that members of the association should take an active part in the proceedings of the annual or other meeting of the College; (*c*) to approach the council upon all matters affecting the material interests of the College and its graduates; (*d*) to give the council of the College all the support possible in all matters of professional interest when the association considered such advisable. It was unanimously resolved to form a council in London, and to take immediate steps to initiate an active propaganda. The Fellows who took part in the discussion were Lieutenant-Colonel Adye-Curran, Drs. John H. Dauber, Canny Ryall, Shepherd Boyd, Thomas North, Edward Yeates, Joseph F. Peart, Thomas Wilson, and Frederick Spicer. Any Fellow of the College wishing to join the association should communicate with the secretary, Dr. Andrew Charles, 64, Harcourt Street, Dublin; or with the London Secretary, Dr. Frederick Spicer, 142, Harley Street, London, W.

THE medical and other graduates of the University of Glasgow resident in and around the metropolis met together on November 29th for the half-yearly dinner of the London Glasgow Club. Professor Medley was in the chair, and among those present were Sir Donald MacAlister, Sir Henry Craik, M.P., and Surgeon-General Babtie, V.C. In proposing the toast of the evening, Professor Medley suggested that the fact that he had been invited to take the chair was in itself good evidence of the excellent relations existing between the club and the university. The time when cordial relations did not exist between the senate of the university and a certain number of its graduates had long since passed. A committee of the general council, appointed ten years ago, had done much to bring the university and its graduates into closer relations. It had also brought about an extension of the Students' Union. A number of Glasgow institutions not previously connected with the university had recently been knocking at its doors; one of them, the Technical College in Glasgow, had already been affiliated. The directors of technical institutions felt that the applied sciences were not sufficient in themselves for the purpose of education, and were everywhere beginning to see the advantage of co-operation with institutions whose aim was the pursuit of knowledge for its own sake. The members of the club had been very generous to university institutions in Glasgow, and he was charged with a special message of thanks from the athletic club. The toast to "The Guests" was proposed by Dr. C. O. Hawthorne, and acknowledged by Mr. F. Henderson, of Glasgow. The medical honorary secretary of the club is Dr. David S. Roxburgh, 30, Seymour Street, Portman Square, W.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INSPECTION OF MENTALLY DEFICIENT CHILDREN.

A SCHOOL INSPECTOR would be grateful for any forms of report on mentally deficient children, both on the physical examination side as well as on the physiological aspect. Any reference to a work containing a good anamnesis for examining mentally defective children would be welcomed.

ANSWERS.

DEFECTIVE EYESIGHT AFTER CONFINEMENT.

MR. KENNETH CAMPBELL (London, W.) writes: In reply to Dr. J. A. Wilson (Cambuslang), may I suggest that the defective eyesight in the cases he cites arises either from (*a*) detachment of retina or (*b*) haemorrhages into retina?

BENEDICT'S TEST FOR SUGAR IN URINE.

R. J. L.—A. R. Benedict recommended in 1911 the following solution in the place of Fehling's solution for the estimation of reducing sugars in urine, on the ground that the action is more sensitive and the solution keeps indefinitely: Copper sulphate, 18 grams; sodium carbonate, 200 grams; sodium citrate, 200 grams; potassium thio-cyanate, 125 grams; 5 per cent. potassium ferrocyanide sol., 5 c.cm.; water to 1 litre. The copper sulphate should be carefully weighed. The test is carried out as with Fehling's solution, the end point being the disappearance of the blue colour; 25 c.cm. of the mixture are reduced by 0.05 gram of dextrose, and by 0.053 of laevulose.

LETTERS, NOTES, ETC.

PHYSIC ON THE CARPET.

DR. CLIPPINGDALE sends us the following from the *Public Advertizer* for May, 29th, 1765: "A Bill for regulating the Practice of Physic was on the carpet when the last letters were received from Jamaica."

MODERN FRENCH VIEWS ON NEPHRITIS AND URAEMIA.

DR. CHARLES G. JARVIS (Paris, November 30th) writes: May I be permitted to correct a sentence appearing in my letter published in your last issue, and which, through the omission of three words, is meaningless. The sentence should read as follows: "Visceral oedema can be easily suspected when a rapid decrease takes place in *the weight of* a patient placed on a dechloridized diet." For oedema of deep lying structures "melts" in the same way as subcutaneous oedema when salt is withheld from the patient's food and his weight decreases accordingly.

BRITISH RED CROSS STAMPS.

THE British Red Cross Society has issued three stamps from the design of Mr. Bernard Partridge with the view of helping its funds. The design is shown in the accompanying drawing. The stamps are of three denominations—green a penny, blue a shilling, brown five shillings, and it is suggested that they might be used for fixing to a Christmas card or to the envelope in which it is enclosed. The work which is being done by the British Red Cross Society is described in another column, p. 1617.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	1
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.